COIN-OPS, CARTS AND COMPUTER SOFTWARE REVIEWS

VIDEO GAMES™

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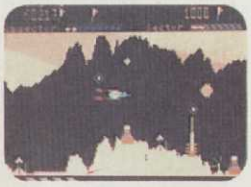
real music for your Atari.*



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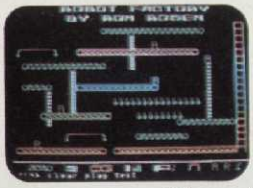

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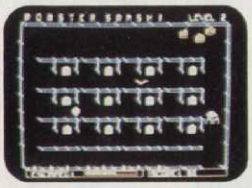

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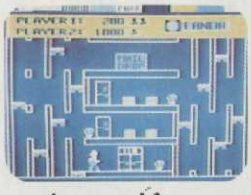

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Volume 2, Number 8 May 1984

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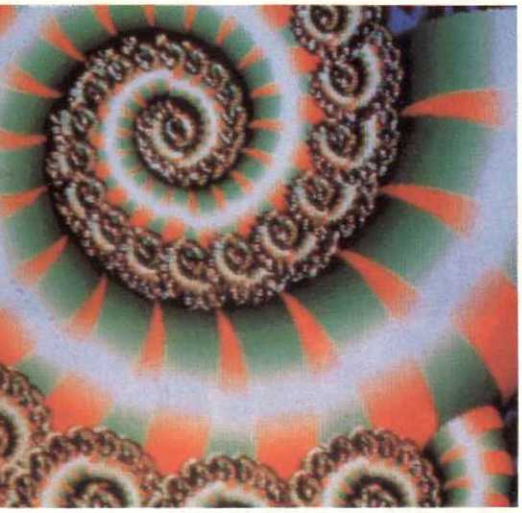

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Atomic Castle cover courtesy of Laser Disc Computer Systems.

Save New York™

It was as peaceful a day as New York ever gets, when suddenly the sky went dark and a monstrous droning noise filled the air. Hordes of grotesque aliens were swooping down from all sides, biting into the Big Apple as if they hadn't eaten for days. They were laying eggs, too. Horrible slimy things that got down into the subway tunnels and began clawing their way up. If anyone was going to save the city, it would have to be me. I leapt into my rocket and began blasting away. I thought I stood a fighting chance, but fuel's running low... another wave of invaders on the horizon... signing off...

SAVE NEW YORK.™ For the Commodore 64.

CREATIVE SOFTWARE

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HYPERSPACE

Outside of various trade publications, the number of consumer-oriented magazines devoted to covering developments in the world of video games—whether they be arcade, home or computer based—has noticeably dwindled. Having personally observed and been involved with both the game and electronics industries for the past decade, it is amazing to me to see so many individuals abandon an area that still deserves so much attention, if for no other reason, than the major role it plays in our lives.

It is almost as if the phenomenon, which spawned *Video Games* and other similar magazines, now that it has dissipated somewhat, has resulted in this mass exodus to the next envisioned new craze. Some magazines have gone so far as to change their name or their editorial focus, while others have been created to specifically capitalize on the interest being generated by the growing popularity of personal computers and computer software.

In viewing this change in emphasis, I can't help but wonder whether these same publications might not be forced to undergo another metamorphosis somewhere down the line when the inevitable advancements in technology bring us the next favorite attraction in leisure time entertainment. Just imagine for the moment if laserdisc games and programming were to take off and become the new media darling. Would we then see a host of *laserdisc* magazines?

I suppose that having witnessed over the years so much evolutionary development in coin-operated equipment, electronic toys and games, home video and computers, I have become somewhat cynical of those who suddenly appear to seemingly support a field they may not totally believe in and then quickly shift gears to cover the next *fad* at the first signs that public interest has waned.

Ever since I took over as editor of *Video Games,* back with the May, 1983 issue, I've never felt restrained to strictly define the magazine's editorial boundaries and content solely on the basis of a literal interpretation of our name. For me, video games as a broad-based category of products, were always just the starting point from which everything else emanated in terms of what we could potentially report on issue after issue.

And we'll continue to be there for you in the future under the banner of *Video Games.* Just don't ever let our name fool you, between our covers, each and every month there will always be more than a few surprises and an exciting world to discover and explore.

Similar to the report regarding Mark Twain's condition, Imagic is not only alive and well but also thriving. After a period of regrouping, this much heralded game and software company is most definitely in the race. We did a great disservice to Imagic with some comments by contributing editor Dan Persons in his review of Fathom in the March issue and would like to offer our sincerest apologies to Bruce David and his fine staff in Los Gatos.

Video Games would like to give credit to Python Angelo who conceived and designed Star Rider for Williams Electronics, our April issue cover story.

Roger C Sharpe

VIDEO GAMES

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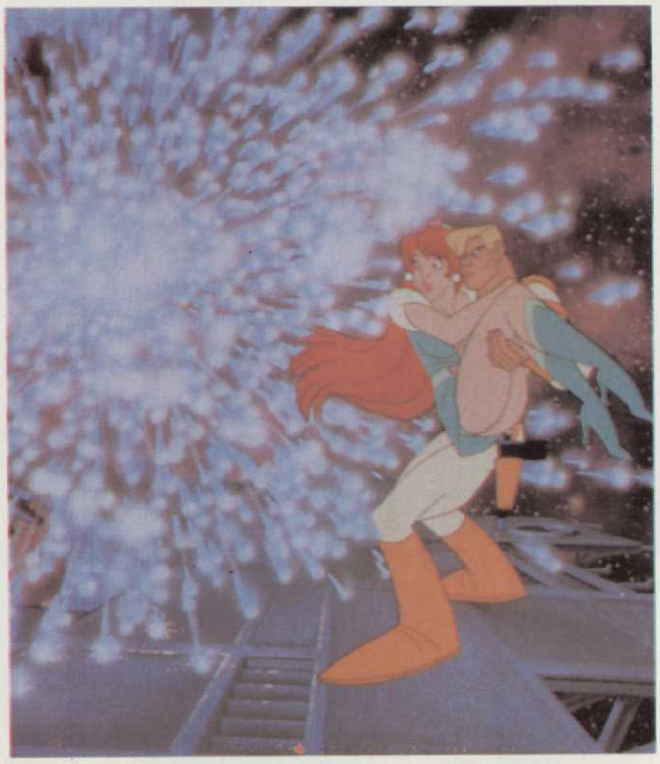
BLIPS

Ace's Wild

You read about him first in *Video Games* (December cover story) and in the weeks ahead you'll be finding him in arcades across the country. It's Space Ace, the new animated superhero from the folks who brought you Dragon's Lair. Under the direction of Don Bluth and his talented staff, Magicom (formerly known as Starcom, this alliance includes Don Bluth Animation, RDI and Cinematronics) has served up an adventure filled with an almost never-ending cast of villains and a challenge sure to test even the best players.



Space Ace and his girlfriend Kimberly are out for a ride when the evil Borf attacks, zapping Ace with a dreaded Infanto Ray and kidnapping Kimberly. The ray has changed Ace into a small, young boy Dexter, which is only the beginning of Borf's plan to take over the Earth by changing everyone into babies.

Your mission is to help Dexter regain his manhood, save Kimberly and the Earth, destroy the Infanto Ray and, finally, defeat the mighty Borf. There's an eight-way joystick and a weapon/energizer button which can be used several times during the game to allow Dexter to change, briefly, back into Space Ace.

Throughout the game, Dexter must be on the look out for such biological monsters as Carnicula, a carnivorous alien plant, Grootes, Grumlets, Squidants and Babaloons, not to mention the robotic and mechanical creatures which stand in his way.

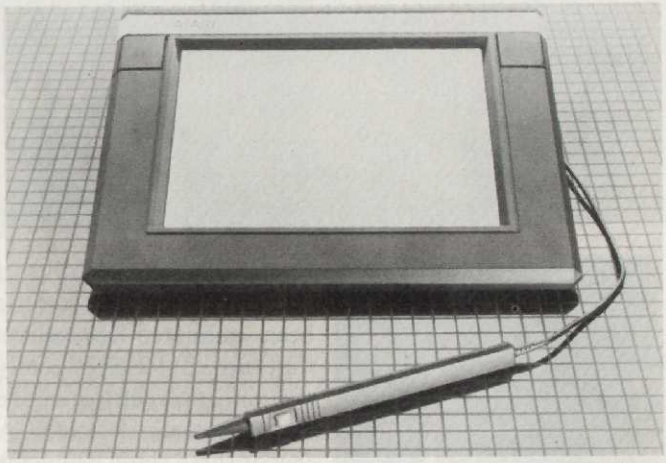
Meanwhile, upcoming for Magicom later this year is Dragon's Lair II which brings back Dirk the Daring and a totally new cast of characters. Also planned to be unveiled before 1984 is over is a game tentatively called Sea Beast. More to follow on these developments when they become available.

—Roger C. Sharpe.

A Light Touch

Now you can turn your television or monitor screen into an electronic canvas with the help of Atari's new Light Pen. Working in tandem with AtariGraphics software, the light pen allows you to access all 128 colors available on the company's home computers as well as hundreds of graphics patterns. The handheld stylus can be used directly on the screen for sketching or even erasing those artistic urges you might have. (The Light Pen and AtariGraphics software are just now becoming available and cost about $100.)

In another related announcement, Atari has released a touch tablet peripheral along an AtariArtist cartridge for owners of their home computers. The touch tablet comes equipped with an electronic pen that features a fire button for menu selection and other programmable functions. The AtariArtist software included with this latest peripheral opens up an almost limitless world of art and graphics possibilities that's great for the young as well as the young at heart. The suggested retail price is about $90.



—Ellen Cammeyer

Talk Of The Town

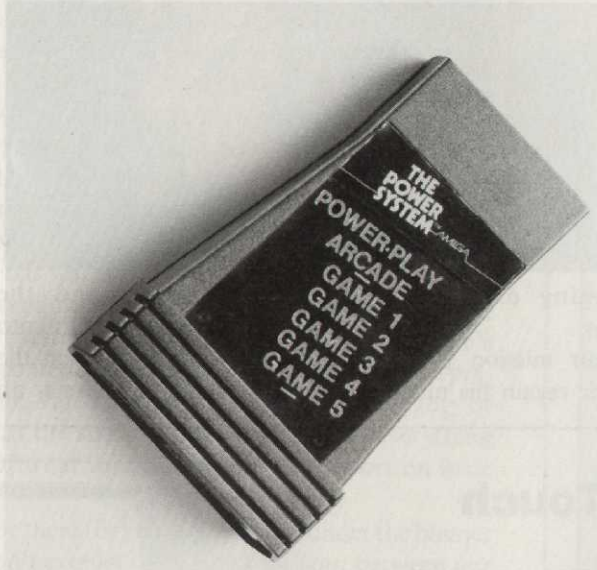
Although speech has been a familiar sound in arcades for quite some time (Williams' Gorgar gave voice to pinball back in late 1979, while Taito's Stratovox brought words of wisdom to video for the first time in the summer of 1980), when it comes to home games things have been basically silent except for some few and far between efforts. Well, now Tymac Controls Corporation (129 Main Street, Franklin, N.J. 07416, 201-827-4050) is hoping that home computer owners are ready for a new generation of talkies. The company's impressive line-up includes Samurai, Codename: DEADZONE, Wizard's Graphics and Type Snyper for the VIC-20; Flyer Fox, Galdalf the Sorcerer, Pegasus and the Trials of Perseus, and First Strike for the Commodore 64; Bio-Defense for the Atari 400/800 and Type Snyper for the IBM PC. With availability in cartridge, disk and tape cassette formats, and prices set to range from about $30 to $35, we obviously haven't heard the last of this story.

—Ellen Cammeyer

Team Effort

VCS owners have something new to be on the lookout for given an announcement made by Imagic and Amiga. The two companies are teaming up to deliver a number of Imagic's VCS titles through Amiga's Power-Play Arcade series. Developed by Amiga, the add-on uses a switching chip that makes possible the production of a VCS cartridge with up to 32K of ROM. Meanwhile, the games covered by this initial agreement include Demon Attack, Atlantis, Cosmic Ark, Dragonfire and Star Voyager, with availability planned for spring.

—Ellen Cammeyer



Eliminating Electrifying Forces

Static: The invisible killer of electronic productivity. It has been estimated by experts that up to 92% of daily system interruptions are caused by static electricity. A few of these static problems are downtime, resets, paper jams and data loss. It has been estimated by computer engineers that static in the user's environment is the cause of up to 60% of all equipment service calls.

By now you must be wondering what causes static and how this problem can be prevented? Static is created anytime two materials come into contact and then separate from each other. In other words it is caused as people and materials move through the everyday environment.

Fortunately, this is a problem with a solution. Static can be prevented with the Staticide static control system. The Staticide system is a two-part plan which can static-proof just about everything in a computer environment. First, to keep static away for months Staticide Liquid should be applied on carpets, floors, chairs, carts and equipment. Then use the Staticide wipes to clean CRT screens, keyboards, plastics and work surfaces.

The unique quality of Staticide is that you don't need moisture in the air for it to work. When tested in environments with less than one percent relative humidity, it was proven effective. This is an added plus for Staticide since static is present all year around. It will work just as well in the summer as in the winter. Staticide is also nontoxic, nonflammable, nonstaining, completely biodegradable and, of course, safe for people.

—Melinda Glass

JUMPMAN'S A GREAT GAME. BUT YOU'VE GOT TO WATCH YOUR STEP.

Meet the Alienators. A fiendish bunch who've planted bombs throughout your Jupiter Command Headquarters.

Your job? Use your lightning speed to scale ladders, scurry across girders, climb ropes and race through 30 levels to defuse the bombs before they go off.

That's the kind of hot, non-stop action we've packed into the award-winning,* best-selling Jumpman,™ and into Jumpman Jr.,™ our new cartridge version with 12 all-new, different and exciting screens.

Both games force you to make tough choices. Should you avoid that Alienator, climb to the top and try to work your way down, or try to hurdle him and defuse the bombs closest to you before they go off?

If you move fast you'll earn extra lives. But if you're not careful, it's a long way down.

So jump to it. And find out why Jumpman and Jumpman Jr. are on a level all their own.

One to four players; 8 speeds; joystick control. Jumpman has 30 screens. Jumpman Jr. has 12 screens.

*1983 C.E.S. award winner.

EPYX COMPUTER SOFTWARE

STRATEGY GAMES FOR THE ACTION-GAME PLAYER.

Guess Who's Coming To Dinner?

Ever since science fiction began to more closely resemble science fact, we've been waiting for the anticipated, newest member of the family to find his way home. Already we've seen some initial creations, such as Nolan Bushnell's clan of Androbots. But now there's Hubot, a multi-purpose home robot from Hubotics, Inc. (5375 Avenida Encinas, Suite B, Carlsbad, Calif. 92008, 619 438-9028).

Forty-four inches tall and constructed of a single mold of polyethelene plastic, Hubot features a CP/M personal computer operating system, monitor, detachable keyboard, optional printer and a 5¼ inch disk drive. In addition, Hubot isn't the silent type, with his synthesized speech and 1,200 word vocabulary. An optional voice command module expands this capability, allowing Hubot to speak in a real voice, with an unlimited vocabulary in any language. This option also enables other members of the family to issue commands verbally via a microphone.

But there's more to Hubot than meets the eye, such as an 12-inch black and white television, AM/FM stereo cassette player, Atari 2600 video game system and a digital clock. With the ability to perform a number of different tasks, as well as more planned in the near future, Hubot is battery operated and needs to only be plugged into a wall socket to get recharged for the day's activities. (Available in leading department stores around the country, all you'll need is about $3,500 to have a Hubot of your very own.)

—Ellen Cammeyer.

One-Stop Shopping

The purchase of video and computer games may be slightly different in the near future if Cumma Technology Corporation has anything to say in the matter. This new company's ambitious plans are to install about 3,000 MetaWriters in retail outlets nationwide by Christmas of this year. But what is MetaWriter?

The high-tech creation is a free-standing, self-sufficient vending machine. With the touch of a button you'll be able to select any of several hundred programs stored in the unit's library, preview the title on screen and then instantly load the program, if you so desire, onto a specially designed, reusable cartridge (called a MetaCart) which is manufactured by Cumma. In its present form, the MetaWriter unveiled at the Winter CES can accept cartridges designed for the Atari VCS, VIC-20 and Commodore 64, as well as ColecoVision. An expandable system, Cumma plans to add more cartridge slots for other popular models including the IBM PCjr.

And MetaWriter won't be offering just fun and games, although the major emphasis will be in this area. The range of programs are slated to include educational titles and programs for general use in the home. As for the price, you should expect to pay anywhere from $1 to $15 per program, although the average for all offerings will be about $7.

—Ellen Cammeyer

Video Game Blues

The meteoric rise and subsequent fall of the video game industry is a captivating industrial soap opera which has fascinated industrial observors and obsessed business analysts like nothing else since the rise of OPEC.

None other than that bastion of business acumen and Know-It-Allism, *The Wall Street Journal,* the largest daily in the free world, has hardly published an editorial that didn't include a major story on the home computer or video game industry. According to their latest reports, the video game industry which experienced a bad Christmas last year, will do much worse this time around. "Confronted by big inventories, widespread price cutting and competition from home computers, all but a few companies are expected to leave the business entirely. Those who continue making video game cartridges will have to diversify into game and other software for home computers which is quickly becoming a market that's even more competitive than video games.

The shakeout has been as dramatic as the fortunes of Ewing oil. Richard Stearns, executive vice president of Parker expects the 29 competitors he faced last year to dwindle down to four or five. And even though sales of games are expected to be between 75 and 100 million, many of the sales are expected to be cut-rate and derived from present bloated inventories with such major retailers as Toys "R" Us holding back placing orders.

With many companies already out of business and Mattel, Milton Bradley, Sega, CBS, Spectravideo and Fox hurting, even market leaders are struggling. Atari, which has suffered through plenty of problems with their home computer business, is still in the strongest position in the video game industry followed by Activision. However, both companies are very worried about their competitors' price cutting and inventory dumping.

Activision, which went public in June, is projecting a 3-5 million dollar loss in its second quarter. President, Jim Levy says that games are still a healthy, growing business if the games can be played on home computers not just video game systems. Activision is presently designing games for Atari computers and plans to begin designing for Coleco, Commodore and IBM. But if game makers think that computer games will be their salvation, they're in for a rude awakening.

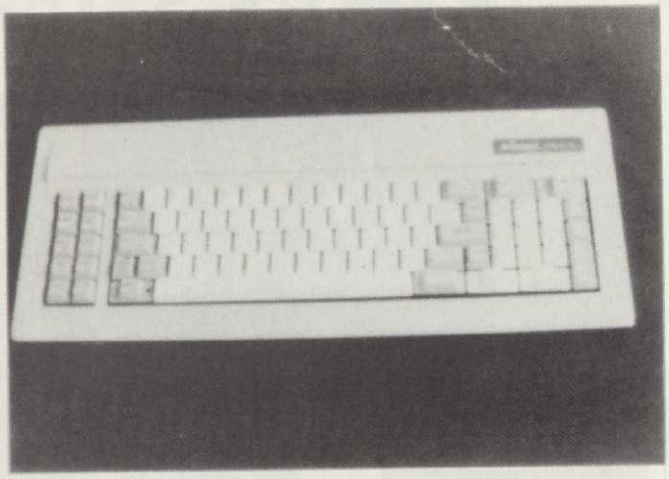
There are currently only about 3 million home computers in use as opposed to 15 million game systems. The minimal market, in comparison, seems to be hardly enough to pick up the slack. and even if they begin programming for computers the questions is what system to program for. Says Stearns of Parker Brothers: "I don't know what system to program my games for. I programmed for Intellivison and now retailers don't want that. If I start programming for the Commodore 64, retailers might want software for another system."

Companies such as Coleco, that make both software and hardware, seem to be in a better position. In fact, Coleco has stopped making its ColecoVision system to concentrate on ADAM, which can play all the games and be expanded onto the game system. "Our survival in the overall cartridge is linked to the success of ColecoVision and ADAM and tying the two products together," Coleco's Chairman Arnold Greenberg. In addition, Coleco has cut back on production of cartridges for Atari and Mattel.

But with all these industry woes, the consumer should benefit from all this drastic price cutting. In fact, don't be surprised if reports wind up commenting on the rise in game sales. The only problem for the manufacturers is that many games are already selling for a fraction of their original retail prices in attempts to reduce inventory, so although the outlook for buyers may be good, profits aren't going to be as staggering as they once were.

—Perry Greenberg

Hop To It



New computer models continue to be introduced at a rapid pace, and one of the latest, The Rabbit II, is scheduled to be available this spring. With a full stroke keyboard that features numeric keypads to speed up data entry, the unit provides built-in 80K RAM that's fully expandable to 144K RAM. In addition, this entry into the personal computer sweepstakes offers a unique, built-in Data-Safe memory which can store up to a maximum of 8K bytes of data even after the unit's power has been switched off.

When connected to a television or monitor, the Rabbit II allows you to divide your viewing screen for line-by-line tracing of program execution in either the text or graphics mode. Finally, add on a low cost interface card, and the Rabbit II becomes a game machine capable of playing ColecoVision video games. The Rabbit II will cost about $300. For more information, contact Rabbit Computer Inc., Room 610, Chamber of Commerce Building, 39-01 Main Street, Flushing, New York 11354.

—Ellen Cammeyer

Feat Of Clay

Out of the Fifties and Sixties, but more recently the inspiration for one of Eddie Murphy's best routines on *Saturday Night Live*, the legendary Gumby is finally coming home. A green colored animated clay figure who once had his own televison show, Gumby will now appear in a new educational program from Datasoft for Atari and Commodore 64 systems as well as the Apple // series and IBM's PC and PCjr.

In addition, Datasoft has announced a number of licensing agreements for the rights to such arcade games as Nibbler, Juno First, Genesis and Lost Tomb. In the latter, which was released by Stern Electronics, players must make their way through the depths of an ancient Egyptian tomb that's infested with deadly creatures and mysterious mummies. A game of survival, there are 91 different chambers in the maze and action that is non-stop from start to finish.

—Ellen Cammeyer

Making It Official

The 1984 United States National Video Game team of Ottumwa, Iowa is going to be doing it in style and so can you. Walter Day of the Twin Galaxies International Scoreboard (seen every month in *VG*) and Director of the team has announced that Video Maniac will be the official sportswear and accessories supplier for his players.

Video Maniac sells and distributes the Video Sports Glove, a Video Maniac Girl Poster, the VCH Video Coin Holder and complete line of quality tee shirts, caps and jackets. All products are available via mail order. For more information and a full color catalog, just contact Robert Chavez, P.O. Box 2728, Capo Beach, Calif. 92624, 714-496-8513.

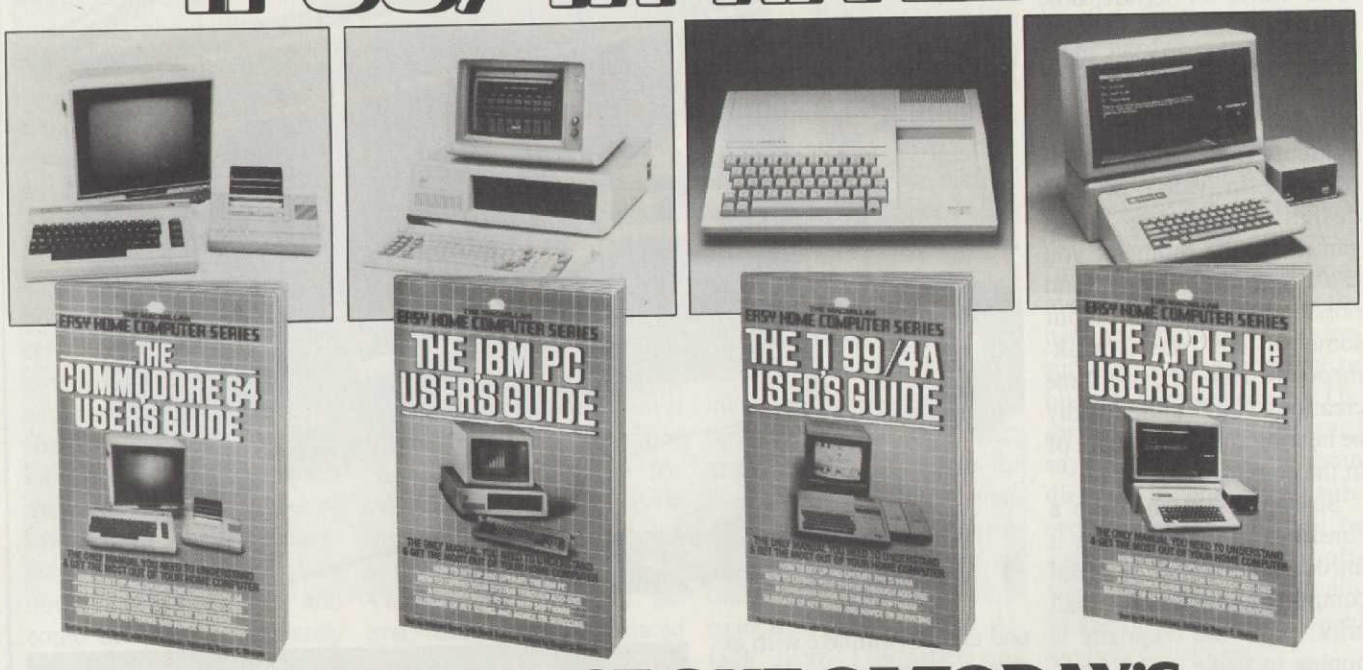
—Ellen Cammeyer

Role Reversal

The standard practice has been that a game gets a reputation and following in the arcades. Then in some way, shape or form, via a licensing agreement, it reappears for home play. This time, at least, the process has been reversed with the announcement by Borderbund Software that its popular Lode Runner will soon be making the transition into a coin-op machine. IREM of Japan, a company probably best known for its creation of Moon Patrol and Motorace USA, will, initially, be releasing Lode Runner in Japan this summer, before the game makes its way to these shores.

—Ellen Cammeyer

COMMODORE 64 · IBM PC
TI 99/4A · APPLE IIe



GET THE MOST OUT OF TODAY'S HOTTEST COMPUTERS WITH THE MACMILLAN EASY HOME COMPUTER SERIES

One look at any of the puzzling manuals that come with the new Commodore 64, IBM PC, TI 99/4A, or Apple IIe will convince you—

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Bringing Things Down To Size

The world of leisure time entertainment continues to advance and take full advantage of the current technology. No where is this more evident than with developments in video product design. Forgetting about games for the moment, you can't help but marvel and possibly get excited about some of the recent breakthroughs. Here are just three creations you'll undoubtedly be hearing and seeing more of in the coming months.

Sinclair Research made a considerable impact when it introduced a small personal computer at an equally small price. Now the company is hoping to strike it rich again with the release of a remarkable 2-inch flat-screen pocket television. Weighing only 9½ ounces, the TV delivers a surprisingly bright picture anytime and anywhere. Powered by a special Polaroid flat battery, there's a foldaway aerial, personal earphone and protective carrying case. Scheduled to be available in the United States by the middle of the year, the Sinclair television is tentatively planned to cost about $150.

Having already caused a sensation last year with a tiny TV, Casio is back in the picture with another variation on the downsized trend. The model TV-50 features a 2 3/4 inch screen as well as a built-in AM/FM radio. Small enough to fit in a pocket, the unit uses a high-resolution LCD screen and built-in speakers for a high-quality, high-level sound. The TV-50 can be operated via AC, DC, car battery or rechargeable battery and comes complete with external antenna, earphone/headphones and external power supply. Just beginning to hit store shelves, the price is about $300.

The revolution continues in portable video with Konica's first color video camera. Weighing only 1.6 pounds, it's the world's lightest and is compatible with all VHS format VCRs as well as Beta models when used with a standard adapter cable. The model CV-301 features a new 1/2 inch S-M Cosvicon Pick-Up Tube that virtually eliminates all streaking in video playback reproduction. In addition, there's a unidirectional electret condenser microphone, f/1.5 manual 3 to 1 zoom lens with 10-30mm focal length, through-the-lens optical viewfinder with in-finder LED to indicate low-light recording situations and any power warnings. The price for this potent portable is about $500.

—Roger C. Sharpe

BLIPS

Tuning Into Video Games

Musician Frank Zappa once sang about "the slime oozing out of my TV set."

One of these days, people around the globe will see a much prettier sight coming out of the tube: Video games. Already, subscribers to *Play Cable* in the New York area have been treated to games on their cable system. Owners of Intellivision systems, however, were the only ones who could use the service and that limitation severely hampered the effort. While the company, half-owned by Mattel, will continue to service current customers, it is not going to expand and could fade away completely in the near future.

In the meantime, Atari and Activision have made a joint announcement to distribute video games electronically into the home. With its usual tight-lipped style, Atari refused to reveal the details of its plans and Activision spokesman Michael Ayers has only said that the technology is one not currently being used.

Coleco and AT&T have made a similar announcement. While details are sketchy, the moves by these companies point to a jockeying for market position in a new system for getting games into homes. Many business observers say this new approach to delivering the games in inevitable and the technology for it already exists. Basically, video games will be the carrot to entice consumers to sign up for other computer services via the television. In places such as Miami, subscribers to Viewtron can already get everything from Associated Press news to local Little League scores from the Dade Country Recreation Department—and a menu of video games.

In the games world, the company which is likely to be in the best position to meet consumer needs is the Los Angeles-based Games Network. Although the company postponed its debut which was scheduled for the winter of 1983, its plans to go on-line by March, 1984, are on track. Bankrolled by an initial start-up fund of $5 million, the company is proposing an ambitious plan of putting computer hardware into homes for the cost of an extra cable TV fee each month.

If all goes as planned, The Games Network will offer a menu of 20 games to subscribers in the Los Angeles and then branch out to the Pacific Northwest and eventually to the rest of the country and the world. Among the possible games are Jumpman from Epyx, Snack Attack from Funtastic; and others from companies like Broderbund, Quality Software, and Datamost. Each month, five games would be removed from the system and five new ones will replace them.

At press time, the company was awaiting delivery of its proprietary computer hardware system which was being manufactured in Japan by the Shinwa company. "The hardware is called The Window because it represents a window into a new world," says Thom Keith, vice-chairman of the board.

The entire system is designed so it can grow with future software developments and eventually, the network could offer services such as word processing or budget spreadsheets. "The service is software driven," says Randal Wise, program director in charge of subscriber services. "It will be easy to program in new software, that's why I personally pushed for an advanced keyboard early on."

"We can offer expanded services in the future," he adds. "But for now it's games, games and more games."

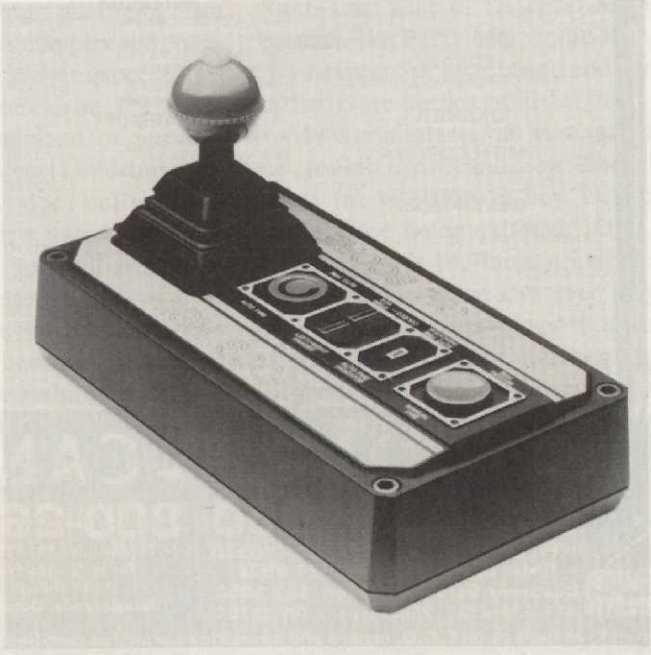
—Mary Claire Blakeman

Handicrafted

Ergonomically designed, the model HS20 Tournament Master console joystick from High Score (1667 West Night Street, Long Beach, Calif. 90813) is a sight to be held. First off, the balanced console is weighted to minimize unnecessary movement of the unit during play, as well as any side roll. In addition, there's a biaxle control stick mechanism which moves tightly and with extreme accuracy in all directions, while the red ball top has been fitted with special side cut edges to prevent hand slippage. Two coin-op size fire buttons have been proportionally spaced, with easy access to an auto fire control that's just a touch away when needed.

You'll also find an Atari VCS and ColecoVision game selector switch on the console, while a built-in port provides the HS20 the ability of operating simultaneously with the Coleco controller for normal keypad operations. There's even a mode selector for right-or-left-handed play, and an optional adaptor allows the Tournament Master to be used with TI 99/4A and Apple computers. priced at about $40, a canvas carry bag is included which holds the HS20 as well as 10 game cartridges.

—Ellen Cammeyer



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Double Speak

A Clarification

I found your response to my editorial that you published in your February 1984 issue most intriguing. So much so that I feel compelled to send you this second letter in an attempt to clarify the meaning (intent) for which the first one was sent.

First of all, my editorial was poorly written. I am a writer. As a writer I put on paper my thoughts and feelings. It was in bad taste that I began my editorial the way I did. However, at the time I felt that an undue amount of space , advertisement, and reviewing were done to promote the Atari 2600 *and* the products that can be used in this system. Whether or not they were produced by several different companies was irrelevant. Also my complaint was not directly with the "Soft Spot" column, but the December 1983 magazine as a whole. Even as it may be, I cannot help the fact that I still feel this way.

Secondly, I feel no malice towards your readers who wish to express their views on the differences between the Atari 5200 and the ColecoVision. I feel that both are excellent systems. It is only where you compare the two where the problems arise. Both companies produce great software, but the comparisons of the hardware itself is equal to that of a football and a basketball. You can play sports with both items but each is designed to accomplish a different goal. The same holds true for both systems, designed to play games *and* to keep up with the ever expanding market. This makes comparisons difficult if not impossible.

In closing, I would like to apologize to you, your staff, and certainly the readers of this publication. My attack on *Video Games* Magazine was unnecessary and could have been accomplished by other means. The difference that I have perceived between the issue in question and the present were welcomed. Thank you for the time and space I received to air my views on the subject as well as your reply.

William D. Harding, Jr.
Frankfort, Kentucky

Super Charged

The interview with Michael Katz of Epyx was most interesting to me for the news about Starpath. Having been a Supercharger owner, I can report my delight, and at times outlandish obsession with their products. You may wish to inform your readers about Survival Island and Sword of Saros, Starpath's latest, and last releases. They are available only by mail and come without packaging. But both are marvelously complex and entertaining, redefining player expectations of what a video game can be. The beach alone in the second load of Survival Island covers 38 screens! Unfortunately, the equal time rule does not apply to advertising of video games, so it is unlikely Survivin' Bob will ever be as famous as Pitfall Harry.

It is nice that the Starpath programmers have found a home at Epyx. Their product had a refreshing consumer orientation, offering more and better for less. Playing their games made me feel affection. "Wow! Who are these guys?"

"Too little, too late," is kind of a cryptic explanation about why Starpath didn't go over as well as they deserved to. The people I've showed my Supercharger were all impressed, but wondered why they'd never heard of it. Why has distribution improved with their demise? Toys R Us has them for a price that makes me ache.

What are the chances of someone else picking up the Supercharger and running with it? One man's disappointment might be another's subsidized market penetration. With them going at liquidation prices more people will have them than ever. Imagine how nice a Supercharger Centipede would look. Think what Avalon Hill might do with the multi-load concept. Or how about a people's movement? A couple of firms are offering Apple and Atari 800 adapters for programming VCS carts. Much more practical would be a system for programming Supercharger cassettes. Aspiring game designers could go into business for themselves. Will any of this happen? Probably not. I'm sure curious about some of the announced, but now, unlikely to be seen games. Sweat, Jungle Raid, Last Line of Defense. A multicassette like Party Mix would be nice. But I expect Survival Island and Sword of Saros are the last of it.

My compliments, at least, and nice try, to Bob Brown and crew. They have made me reluctant to buy VCS cartridges since being exposed. After all, Mindmaster is the most gripping and nerve racking game I've ever played. And after the marvelous illusion of depth in Phasor Patrol, and the graceful, elegant curves traced by torpedos under the computer lock-on feature, can the wobbling hocky puck of Robot Tank be satisfying for long? Nope.

Readers interested in Survival Island and Sword of Saros can get them by calling (700) 277-6703 outside California and (800) 632-7979 inside California.

Kevin Christensen
Sunnyvale, California

I live in a small town that doesn't have many arcades. I still like to keep up with the newest video arcade games anyway. Therefore, I would like the addresses of these arcade game makers: Sega, Taito, Nintendo, Konami Centuri, Universal and Mylstar.

How can magazines like yours get pictures of new games when they aren't even out yet? Can you send me some?

I also saw an ad for a ColecoVision game called 005. What was it or what is it?

Lastly, any chance of Mario Brothers, and Popeye for the ColecoVision?

Troy Nesfeder
Bethlehem, PA

For the coin-op manufacturers contact Play Meter *for a copy of their directory issue. Their address is: 508 Live Oak St., Metairie, LA 70005.*

We get pictures of the new games because we stay on top of releases and are dedicated to bringing our readers the latest machines before any other magazine. Unfortunately, we can't send you any. 005 was a game from Sega which hit the arcades about a year ago. It's your basic maze/chase action shoot 'em up. Atari has already released Mario Brothers for the 2600 and 5200, as was Popeye for the ColecoVision.

Still Alive and Well

I would like to refer to the review of the laserdisc video game, M.A.C.H. 3, in the December '83 issue of *Video Games* magazine. It states that "One thing to watch out for in M.A.C.H. 3 is that the game never stops." I am afraid the statement is *not* true. While at an arcade I witnessed someone end the game. The way it ends is you have a cockpit view of your plane landing on an airstrip while "Over the Wild Blue Yonder" plays on the background. You also hear your teammates greeting and welcoming you back from your flight. All your remaining lives disappear and the game ends abruptly similarly to Dragon's Lair. I would not like for your reviewer to feel to blame because I realize that the number of human beings (or are they?) that can last that long is very small.

Stephen Lai
Edmonton, Alberta, Canada

The Whiz Fizzles

I read with interest Richard Goodwin's article on the TV series *The Whiz Kids* (January '84). While he praises the show and says that computer fans will find their own computers on the show; I feel that this is hardly a reason to watch a show.

The show is boring and the characters are dull; having no personalities. All adults are shown as either adversaries or idiots while the kids are "all knowing." How can a kid, whom it seems is fatherless, afford so many computers and accessories? His mother, it seems is unemployed. And Matthew Laborteaux would be better off returning to *The Little House on the Prairie* series. Why do I watch the series? Well, it has many amusing TV ads for video games!

Myron Shulman
Brooklyn, New York

Romping 'roo

In the Atari 5200 version of Kangaroo, a very unusual thing happens to the monkey on the very top branch when your kangaroo touches him. On the second screen, go the ledge to the right of the bell and wait for the monkey to come. When it does, jump up towards the bell and hit the monkey. Your kangaroo will die, but the monkey will change into a very different shape and still throw apples!

Scott Lowry
Ontario, Canada

High Scores

Joystick Magazine recently ceased publication, and with it went the most extensively published chart of high scores that I know of (101 in the last issue). How about taking *Joystick*'s place and expanding your listing of the Twin Galaxies scoreboard? (It seems you currently list only the games that are the most popular at present.)

I recently broke the world's record on SubRoc 3D (hitting 410,650) and I would like to see my score in your magazine, although this is not a widely known game.

Video enthusiasts like myself always have a few lesser-known or older games among their favorites, and would like to see them listed in the score charts. From my experience, there has been a great deal of distress among hard-core players over the passing of *Joystick*, mainly because of its charts.

You have always been more timely than *Joystick* in publishing the most recent scores; let's also see you the leader of comprehensiveness!

David Palmer
Auburn, CA

We've been considering doing a special listing in an upcoming issue of all Twin Galaxies' high scores. What does everyone think of the idea?—Ed.

Tricky Moves

I've found a secret move in the Jungle Hunt cartridge for the Atari 5200! If you push #1 on the keypads the game goes through all the screens and continues until you push reset.

Jon Adams
St. Anne, Ill.

I've found a trick in the VCS version of Q*Bert. If you are on the top square of the pyramid and Coily is on the bottom left square below, you can jump off the pyramid to the upper left without losing a life and gaining 500 points!

Clark Pope
Rock Falls, Ill.

A Correction

In the article "History of Video Games" (January '84), there are two facts published that need to be corrected: 1) Steve Russell at MIT did not create Spaceware in 1952; it was 1962. 2) In the same story it was reported that Baer was not the man who helped develop radar and the atomic bomb; Higinbotham was.

We thank Frank Lovece, who wrote the article, for bringing it to our attention.

Address your letters to Doublespeak care of VIDEO GAMES, 350 5th Ave., Suite 6204, New York, N.Y. 10118. Letters that require a personal reply must be accompanied by a self-addressed, stamped envelope.

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GAME AND COMPUTER SECTION

How much money do you spend on video games per week? _____

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What home game system do you own? _____

How long have you owned it? _____

How many hours per week do you play? _____

If you would get another system, which would it be? _____

What home computer system do you own? _____

How long have you owned it? _____

What peripherals do you own? _____

What is your favorite software/game or otherwise? _____

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IMAGE MAKERS

Insights Into How Computers Get Graphic

By Richard Goodwin

Tron *helped revolutionize the way movies are made by using computers—the very same computers that have helped NASA enhance satellite transmissions revealing brand new stars, galaxies and potential planets. What we are watching is the growth of a new field of expertise and a field that will have more of an effect on our lives as time goes by.*

Even now, artists are beginning to explore the commercial uses of computer graphics, moving beyond things such as corporate reports and moving into the SoHo galleries and even the home.

This new area has been explored in great detail in Joseph Deken's Computer Images, *recently published by Stewart, Tabori & Chang in a handsome trade paperback retailing for $16.95. Deken teaches both Computer Science and Business at the University of Texas and has also written* The Electronic Cottage, *covering the world of computers in our society.* Video Games *spoke with Deken recently about the images and ideas found in his book.*

Video Games: Why don't we start with some information on our background?

Joseph Deken: I got into computers about twenty years ago, when I was a high school student. I was sponsored by the National Science Foundation for a summer program and did some computer work then, writing my first programs. I was then asked by the publishers, Stewart, Tabori & Chang to provide the text for this book. They contacted Tim Ferris first who had seen *The Electronic Cottage* and contacted me so it came roundabout. Ferris liked the book and its treatment in technical terms.

VG: At that point did you need a lot of research?

JD: No. The book itself sort of consists of two parts: The images themselves and the text, which tries to explain them from a conceptual point of view, how computers work as image making machines. Of course, a lot of those things had to be thought about when I was at Stamford for my two-year post-doctorate. Actually thinking about the computer as an image-making machine was pretty much already done. It's not really a nuts-and-bolts book, so there wasn't that technical background research to do. The point of view of the book is that this is a very captivating kind of imagery and people will want to know how it fits into the whole realm of human imagery.

It's from a person's point-of-view rather than a machine's.

VG: Then your intended audience is more the casual reader than computer professional?

JD: That's right. I would think that people who are specialists in computer graphics will look at it and they will appreciate a lot of the images. The text is written for the relative novice about the technology. I'm trying to explain, not so much how the technology works, although there is a little of that in chapter three, but how the technology fits in to human efforts.

There's a lot to cover and they had a collection of some 750 images of which I selected and organized 250 for the book. In some sense these are the best or are the most descriptive of the kinds of things I was talking about.

VG: Since you finished the book, what sort of changes have there been in the field?

JD: Well I think the most important thing that is happening is that the price of the technology is coming down fairly rapidly whereas these aviation simulators were used historically only by NASA and the Jet Propulsion Laboratories had the resources to afford these kinds of images. The fact is, prices are coming down because the machines are proliferating.

I think I've seen three or four new blurbs about applications of computer images. Things like commercial arts, graphics; companies that wouldn't have dreamed of getting into the technology not long ago. There's a lot of interest among commercial graphic places and what I see happening, based on the artists I've spoken with, it's only a matter of time before practicing artists get into this on a big scale.

You can't get a $10,000 computer to do anything really interesting but you can get a 40 to $50,000 computer and do something interesting. That price will gradually come down.

VG: You point out in the book that graphics can be done on machines as simple as the Apple II.

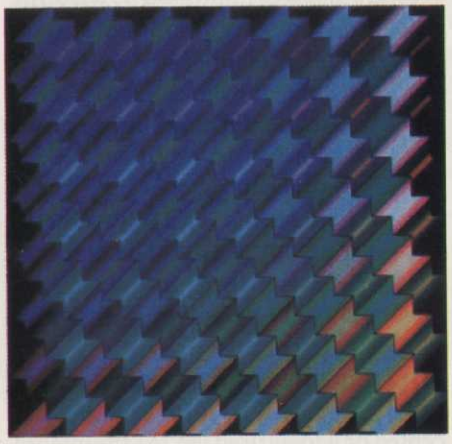
JD: Some kinds of graphics, but what I'm saying is that there are machines that graphic artists would find interesting. I gave a talk at the University of Texas for their art classes and I used a system called Versiwriter, used on an Atari—it's not all that fancy. The interesting thing was, I gave a talk about the book and showed them how to do some images on the Atari. I came back about two hours later and the students had continuously used the machine. Like I say, some of the professional high-tech aspects need some more development before they come down in price, but the concepts of what it means to make images on a computer are real interesting to an artist.

VG: Most people are exposed to computer images everyday through television commercials, right?

JD: I'd say that's where they see most of them and that's why I started with that in chapter one. I suppose if you looked carefully, that's where you would find most peoples' exposure. A lot of times, you don't even realize you're watching computer graphics.

VG: They've also been using computer graphics in the movies on an increasing scale. This summer they have *The Last Starfighter* with all its graphics being done on a Cray. Do you think computers will help revolutionize the way special effects are done in movies?

JD: The real revolution in special effects is that those machines and those people have shown the way, with *Tron*, and Lucasfilm also in that category. Lucasfilm, for example, uses computers to control their models and there are a number of ways computers can be used. I think if only one or two studios use computer graphics then it will have an effect on special effects. Those studios will be the trailblazers. The real revolution will be when the computer effects are as much a part of moviemaking as are the props.



I feel the technology needs to go a little farther because the investment in the Cray and things like that are fairly substantial. The more people that get in the act, the more creativity there will be in movies and video.

VG: One of your other chapters discussed creating "ultra-realities" for training purposes, revolutionizing the way pilots are trained. Beyond the military applications, are they being used for civilians?

JD: Commercial airplane pilots have

been trained on commercial simulators for a long time now. Ed Rosenfeld, who collected some of the images, went to Singer-Link in Binghamton, New York and flew a simulator for a 747 and he said it was a very surrealistic experience. At the end he asked if he could crash the plane and he did, with the images going almost until he hit the ground. He got into his car later, turned on the radio and heard the news of a 747 that crashed, so he felt like he was in the Twilight Zone.

It's certainly not just military applications. The other thing is, I think it is having an affect on what people think a computer does. I'll give you three stages for computers: First there's the old-fashioned notion that you typed in a line and the computer gave you a line back. There are these tremendously successful programs that we see now which are dynamic display programs, like VisiCalc. The image there is that the computer puts an entire screen in front of you, like the cockpit of an airplane so there's the display which you interact with. The third dimension, which people are just now beginning to work on, is the notion that the computer puts you in an environment and you deal with that environment. It's not just a simulation, but the whole notion of interfacing with a computer is moving to all three dimensions.

VG: Can you see the simulations being used for such everyday purposes as teaching teenagers how to drive?

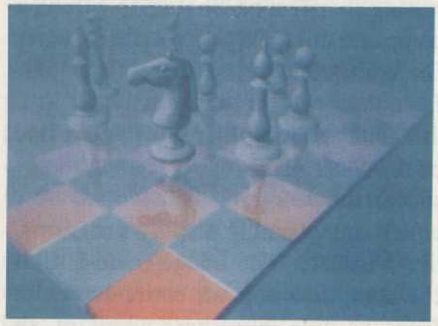
JD: I think there's no question something like that will happen. I mentioned video disc technology and there are a couple of examples in the book but if you want to distribute something like that to every high school in the country, you need to work on price a little bit more, than if you were just training 747 pilots. It's nearly to the point of being cost-effective.

VG: In addition to training, you talked about using the "ultra-reality" to bring into the home a vacation or unique experience.

JD: Something like that is not that far away, I don't think because there is already a commercial system available to travel agents. For example, a person walks into the office they can see, via video disc, scenarios from the places available to visit. That's more like a video bank than an interactive system.

Again, that's the difference between sending a video disc with 150 countries to a travel agent and having one disc per country. Then you can tour a place like Aspen, Colorado, as noted in the book.

A great many of these things we're talking about has to do with pricing and marketing. We're really just at the beginning of this revolution. Based on the fact that there are some commercial products already available, I don't see it as being that far in the future. Maybe it's something that will initially be carried into the homes through cable television.

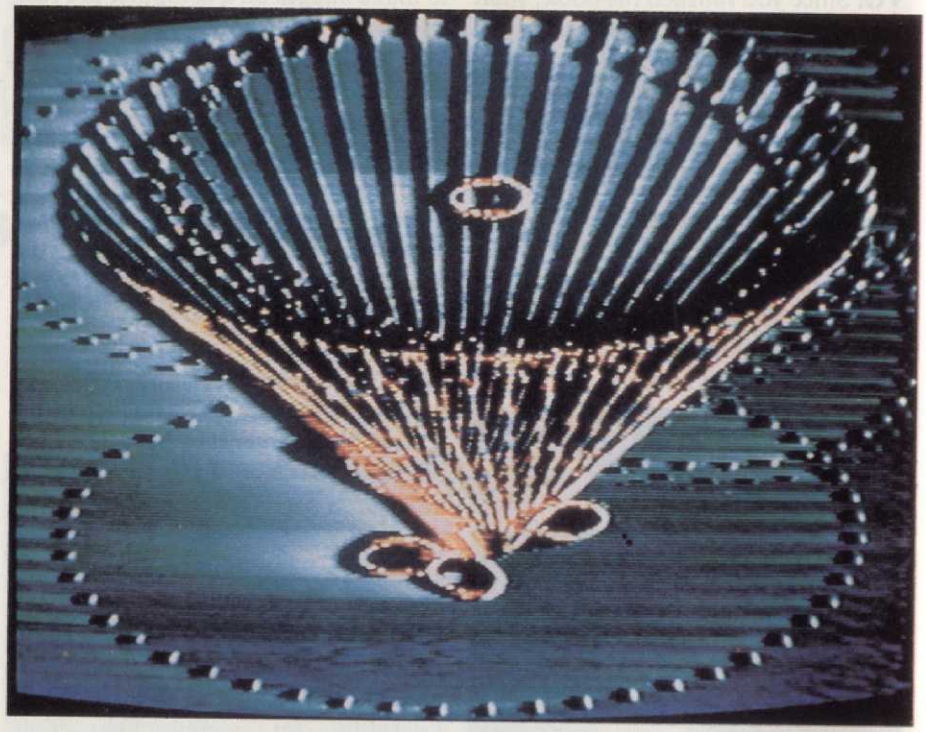


VG: While we're in the home, I was thinking about the systems available. As prices come down and technology increases in the home market, will we see a corresponding increase in the number of people creating graphics and art work?

JD: I think so. In fact, I talked about it in *The Electronic Cottage;* discussing what a library should represent and I think that a service that libraries will always play is to provide expensive resources that should be shared. I can see a scenario of people creating art and graphics on home computers and then having the images actually produced at the public libraries—they would have the more expensive computers.

VG: Let's say I buy a home computer; are there programs I can buy to enable me to create works of art?

JD: I don't know. I think, without mentioning product names, the companies that are involved in video graphics for the Apple and Atari will shift over to provide materials for the IBM PC, just because of the market.



The big thing now is the Business Graphics, things like charts, pie charts, logos. . . .

VG: I was at a computer trade show recently and was impressed by MAGI's display of computer graphics they were selling to other companies.

JD: I think that the slant of the IBM PC will provide the impetus for programs to be developed first and then the artistic spin-offs will follow.

VG: One interesting variation you mention in the book is that the computer may help develop the first standardized language for choreography. Can you go into that a bit?

JD: I don't think you can say it is here today, because it is not universally accepted or widely used yet. As the images in the book show, all sorts of things can be done using modern-day technology. That was an Apple shown in the pictures but certainly it's not far-out technology. There are certain technical issues that have to be answered in terms of standardization of dance notations, throughout the world. It will be interesting to see what happens when they feel it is appropriate.

The other thing about computers is that it is easier to translate between notations that it ever was with printed paper. Maybe it won't matter so much if someone writes in one notation and someone writes in another because the computer can handle the translation.

I have to say of artists generally, and I guess it includes dance people, they tend to be put off by this technology because it has been touted as this mathematical process and they have been intimidated. Once the ice is broken and they see what the possibilities are, then it is irresistible creatively because there are so many things they can do.

VG: We've discussed the arts, the home and other parts of computer images, but we haven't touched on science and the book shows how much aid the computers are giving people in the areas of research.

JD: The major contribution is helping everyday people understand science better. I think there's a lot of interest in science but there is a real need to get science across to people in a way that they can comprehend and the computer's role as an image making device will help tremendously. The computers can translate faster between what the scientists are discovering and what people understand about their work.

The computer can help scientists present new images of the world around us and I think that's a big area, as is genetic engineering. The computer can certainly help people understand the world better and make the scientist's job an easier one. ▲

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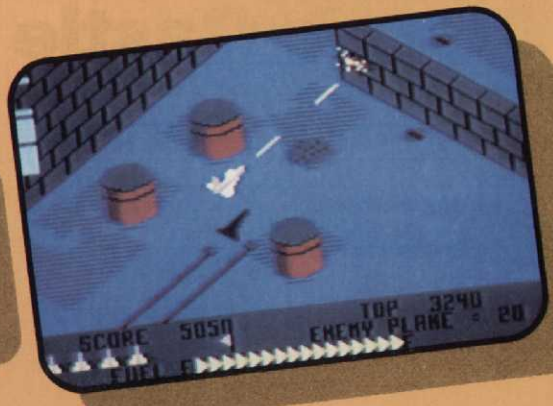

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ON TARGET

Behind The Scenes Of Laser Games' Atomic Castle

By Roger C. Sharpe

Thom Kidrin with one of LDCS' other creations, a laser video juke box.

The laserdisc explosion has been a fairly recent phenomenon in terms of the public's awareness. Interestingly, on the home scene disc players have had a difficult time in gaining widespread acceptance due to the overwhelming popularity of videocassette recorders. For the past few years it has only been the potential applications of disc technology which has kept the format alive.

People within the electronics industry suddenly found themselves talking about 'interactive' entertainment which could only be accomplished through disc players. In fact, a few examples of the art showed themselves in the form of the critically acclaimed Mystery Disc series and other programming where viewers could interact with the footage on screen.

However the real boom for discs wouldn't take place until Sega unveiled Astron Belt at a coin-op trade show in the fall of 1982. Even in its rudimentary form, it was easy to see a vision of the future for arcade games. One couldn't compare the impact of live action film with the likes of a Donkey Kong or Pac-Man.

At a time when the game industry was experiencing a severe slump in earnings, it became readily apparent that the most receptive area for new growth could well be in adapting laserdisc hardware for arcade players everywhere. The potential seemed as limitless as it once was when video games first made their presence felt in the early to mid-Seventies. Only this time the stakes were much higher, not only in terms of the survival of the industry, but also in the cost to develop games of this type.

It would no longer be enough to rehash a maze theme or a slide-and-shoot game. There were production values to consider as well as the integration of live action footage with computer generated graphics in some way, shape, or form that allows players to 'feel' as if they were controlling the action.

Then, in the spring of 1983, just a few short months after the introduction of Astron Belt, a game was displayed that would not only change the timetable for

the availability of laserdisc machines, but also alter the thinking of just what the new technology could provide with a little imagination and a great deal of talent.

Dragon's Lair almost single-handedly established laserdisc-based games as a force to be reckoned with. Apart from the incredibly rich animation, there were those who initially doubted that this format could replace conventional video games. The play action and controls were sluggish they argued, and the screen would blank out during particular sequences, which caused many to worry whether the adventures of Dirk the Daring could be seen as anything more than a novelty attraction—a two week wonder.

Well, history has now proven that laserdisc games are here to stay. If anything, the range of possibilities these types of games afford, leaves many hard-pressed to forecast what the future might hold for coin-operated entertainment. What we have seen in the interim, however, is a noble attempt to utilize laserdisc hardware within more conventional game playing boundaries.

In fact, the line-up of entries we have already seen is rather impressive to say the least. This is especially true when you stop to realize that much of the creative effort has taken place within the past year and a half. Even though laserdisc games are still in their infancy, this hasn't stopped manufacturers from trying to find some answer to what the ingredients must be for a hit game that takes advantage of the capabilities of laserdiscs.

We've already experienced the fly-and-shoot play of Mylstar's M.A.C.H. 3 with its two-games-in-one feature and a live action back drop that is really nothing more, in the final analysis, than a cosmetic touch. Cliff Hanger followed from Stern and tried to capitalize on the success of the animation from Don Bluth, Starcom and Cinematronics. It, however, fell far short of the mark with graphic values better suited for a foreign audience rather than American sensibilities and tastes.

Then in rapid succession we were given the likes of Bega's Battle from Data East. This laser game attempted to integrate computer-generated characters and targets over an animated film back drop, but it couldn't break the monopoly of M.A.C.H. 3 and Dragon's Lair in the hearts of the players. Another effort which failed to attract much attention was Laser Grand Prix from Taito, a racing game that couldn't keep up the pace set by Atari's standout, Pole Position.

By the fall of 1983, when Astron Belt had finally made its appearance in game rooms across the country, the standards were still Mylstar's creation and DL. But there were others who hoped to grab a share of the spotlight. Stern was back with a live action sports game called Goal to Go which tried to make semi-pro football an attractive option.

Elsewhere, Funai of Japan introduced Interstellar Fantasy, another variation on the basic fly-and-shoot theme, while Simutrek, a new company on the scene, was banking on the response to Cube Quest. The latter, dressed up in a new cabinet and enhanced with rich sound effects and background music, was nothing more than an adaptation of Atari's Tempest. Rounding out the offerings was a joint effort from Centuri/Konami, called Badlands. This western theme adventure, featuring a one button control panel, would re-emerge in the spring with only minor changes to the fundamental play action.

If this deluge weren't enough to satisfy the public's appetite for laserdisc games, Williams was gearing up an innovative package, Star Rider. This visual breakthrough in the available technology even went one step further with a sit-down model that offered the realistic effect of climbing aboard a motorcycle for some futuristic racing.

Then the next wave of laser games hit, led by a follow-up from Bally to Astron Belt called Galaxy Ranger. The newly named triad which brought Dragon's Lair to life was out to prove that their initial success could be duplicated with the animated story of Space Ace. Bally, meanwhile, took the action of the San Diego Chargers and the Oakland Raiders, bringing these two teams to the world of coin-op in a laser game aptly called NFL Football.

However, there were still other companies waiting in the wings to strike at a perceived void in the marketplace of laserdisc games. One was Laser Disc

Computer Systems, a Boston-based firm. who had made previous headlines with rumors of dual-disc systems and visions

the likes of which had never been seen in any arcade game. Now, in the spring of 1984, LDCS has developed a laser game which plays like a conventional video game—and in a one disc format.

After having observed and reported on the various developments in laserdisc game design, *Video Games* had the opportunity to go behind the scenes during the creation of an exciting, new coin-op disc machine and preview the finished product well in advance of its scheduled

release this spring. In the process, we sat down and talked with Thom Kidrin, senior vice president of Laser Disc Computer Systems, who revealed the history behind his company and how Atomic Castle came into being.

Video Games: For a company that has yet to release its first coin-op game, LDCS has garnered a good amount of press coverage not only in the major trade publications, but also in some notable consumer magazines and newspapers such as The Wall Street Journal. On the eve of Atomic Castle being made available to game rooms across the country, how long has Laser Disc Computer Systems been in business and how did it all begin?

Tom Kidrin: LDCS was founded over two and a half years ago when the company's president, Robert Walker, and myself sat down and discussed the possibilities of entering into the amusement game business as well as a number of other interrelated activities. My background had been in the area of video production and I had been exploring ways to take those same techniques and implement them in coin-op games, initially.

What Bob and I saw was an industry where it was feasible to upgrade existing video games through the use of conversions, and we saw an opportunity to take advantage of this situation given the number of games already out in operation. Frankly, both of us were amazed that after an extended period of incredible growth, the business was still predominantly based on the sale of dedicated units. What happened when these machines out-lived their usefulness was anybody's guess, but we recognized that every video game had a monitor, a coin-box and some basic controls. As for the electronics, it seemed easy to imagine that by interchanging some component parts, a company could produce new games from the inside out.

VG: In fact, this has happened in the past few years with the appearance of enhancement kits and conversions grabbing a substantial portion of the market? But LDCS's concept differed from what has become the norm.

TK: Yes, most definitely. Where most of the attention had been focused on changing over conventional video games with other standard graphic techniques, such as vector or raster images, and similar play action, we began to explore the use of more sophisticated and advanced technology. Namely, laserdiscs.

After analyzing what had previously been the generally accepted boundaries of arcade video games, both Bob and I felt that the next logical step was the introduction of more realistic, and real life, visuals. For the most part we saw different combinations of stick figures on game after game, with very little dimensionality or detail except for a few exceptions. So for us the visual presentation was a key issue where vast improvements could be made to intensify and heighten a player's experience and involvement with a given game.

Fortunately, we were very familiar with the inroads being made in laserdisc technology, which at that point in time was still limited to home use and some industrial applications. We also knew that a disc-based system could not only provide the ability to feature live action footage, but that there were ways to randomly access sequences during play so that the game would be more interactive and less restrictive than those models which followed the same patterns time after time.

VG: What you're saying is that video games had reached a stage where different levels and screens always followed one another in the same sequence, possibly only changing in the speed or difficulty of the action the longer an individual played. Laserdiscs then represented an alternative format and a break from the standard designs.

TK: We initially were evaluating the viability of a dual-disc system, where two disc players could be controlled by a microprocessor, thus offering the potential for a greater amount of actual footage (hence, longer playing time) and a process where, at each decision point in the game, the action would shift accordingly without any breaks of the visual display.

VG: Obviously you were concerned about the continuity of game play and action on screen, but what about the fact that at this stage no one had even introduced a laser coin-op game? We're talking pre-Astron Belt.

TK: It's interesting because many of our original discussions had to do with what was, and wasn't, being done in the coin-op industry. We were surprised that no one had ever thought of laserdisc before, at least publicly. In fact, Bob and I assumed that the major manufacturers, such as Atari or Bally, had probably looked at the disc technology but found it lacking for some reason otherwise they would have done something.

But the more we learned about the business and how slow change can take place even when it's a forgone conclusion, we became more convinced that we were on the right track. There was a definite need for something innovative to lead the games to their next evolutionary stage and laser seemed to be the most logical direction to follow.

VG: When you did look at the whole category of coin-operated games, how did you perceive the various formats and what their own unique attractions might be for players?

TK: Well, I knew pinball and that these machines had fallen out of favor with the new audience. I felt that the games were truly interactive in the sense that a person could physically move the machine and somewhat control the tempo of the action by skillfully using the

flippers. But with video games we suddenly had a very familiar screen, only this time we were offered an extremely different usage. By simply manipulating a joystick or pressing a few buttons it was possible to effect the movement of the objects on screen. And I think the

novelty and fascination of being a more related part to a device we had all grown up with was the real turning point in the popularity of video games. We didn't have to sit back and be passively entertained. Instead, there was a degree of power in knowing that we could control the screen and the outcome of events taking place before us.

VG: Taking that point one step further, it would be easy to imagine that laser games offer the potential of making that man and machine relationship even closer by the use of real images and settings compared to the kind of graphics we have become used to and almost accept as being 'video'. There really is much more that can be done.

TK: You have to accept the notion that video games are still in their infancy, in much the same way that the motion picture industry existed before the advent of sound and the other advances which followed. Potentially, they're far away from what they can, and will, be in the future. We are just now breaking new ground with the use of film or video tape quality images as a medium to present real life or *real* fantasy situations.

Whether it's a high speed flight through the Grand Canyon or an underwater adventure, laser games can give you the opportunity to go to a place where you might never otherwise have the chance to go in your life. Except for the use of animation, we can provide an almost limitless array of worlds and scenarios where you can experience the situations first hand.

VG: Right now Dragon's Lair and M.A.C.H. 3 tend to stand out from other disc games which have so far been released. Interestingly, they were the first in their respective formats. Isn't there a chance to think that maybe the manufacturers have become stuck on offering new themes?

TK: As with anything new it takes time to get comfortable with the capabilities that have opened up, so I do think that the laser games have tended to reflect themes we've all become familiar with, but this won't last for long. In fact, we firmly believe that Atomic Castle is uniquely different in terms of what we've come to expect from disc-based games.

VG: The play besides being a first-person perspective does integrate the first use of live characters in disc games which is something that has been lacking from the previous games. How did the game evolve to its final phase?

TK: Well, Atomic Castle was created as a result of looking at footage we had already shot in Wales for our first dual-disc effort called Eon and the Time Tunnel. The concept then was to send players back and forth through time in a true saga, but we realized that the state of the art could allow us to go to a single disc system. So we took some component parts of Eon and began to construct a storyline around this alien fortress flying through space on an asteroid.

The objective for players is to make it through the castle in an attempt to disarm a doomsday device. Basically, the play begins with footage on the castle ramparts where radiation balls and other objects are hurling through space. These targets have to be destroyed in order for the player to control a radiation meter which is increasing. If it gets to a critical level, the player loses a life. However, once a pre-set threshold has been achieved, the player then moves into the castle itself, down corridors and inner chambers where new obstacles stand in his way.

What we've attempted to do is bring a sense of different levels of game play into being, where the player knows that he's advancing in his quest. And the use of characters and other creatures only intensifies the experience and the realism of the adventure.

VG: It's almost as if you're playing a movie.

TK: Atomic Castle is a mini-movie of sorts and a participatory experience. You have choices to make as you go along, which is something we thought about in the planning of the game. There were any number of concept meetings and our technical engineering team provided us with parameters as to what we could and couldn't do. We then scripted and storyboarded the entire game, then shot additional footage of the characters which we mixed in with the existing castle footage. In fact, a number of elements have been integrated to make Atomic Castle unique.

Special sets were designed and constructed to keep the continuity of the environment we had created. The characters were then shot with that film processed using special digitalized effects. The targets were high resolution computer graphics and there was even some animation added to the total scheme of things when we went through the production process. In a little more than three and a half months we've reached a conclusion that I believe players are going to find exciting and challenging. Atomic Castle is another step ahead of where laser disc games can be.

VG: After seeing the game, I'd tend to agree that LDCS has indeed created an arcade game the likes of which hasn't been seen before. It will be interesting to see if players around the country don't agree when the game gets released around the country in the next few weeks. ▲

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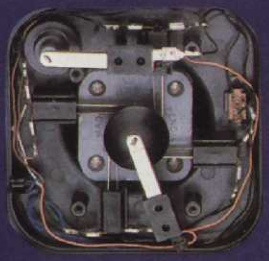

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YOUNG AT HEART
Playing The Field
With Children's Video Games

By Dan Persons

Move over Mom and Dad. No sooner does Atari reaffirm the 2600's ability to present complex and more challenging games, then it appears that they are now trying to retarget the system to a different audience—the young (or young-at-heart).

It's not all that obvious, but the signs are there. For the most part, development of original games for the 2600 has been completely halted with one exception: A line of childrens' games featuring licensed characters from such sources as Sesame Street, Walt Disney, and Charles Schulz's Peanuts. Similarly, TV ads for Atari's new arcade adaptations feature graphics for the 5200, but little or no mention that the game is also available for the 2600. The only time that the 2600 is highlighted is, again, in spots that focus on the new "kideo" games.

Atari hasn't abandoned adapting arcade games for the 2600, not as long as there's a sizable audience that still relies on the console as their sole source of gaming entertainment. But it is only logical to assume that Atari hopes these

gamers will eventually move up to the 5200 "Super System" (or, heaven forbid, ColecoVision). with its improved graphics and sound, and more expensive game carts.

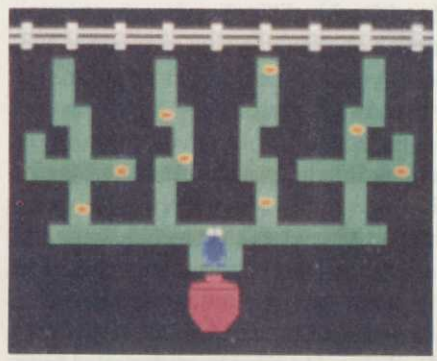
And what will happen to the old 2600 as Dad and Mom and their teenage progeny enter the real of Supergaming? Quite possibly it will be passed on to little brother and sister. Hence, a new, preteen audience for the 2600, an audience with its own special needs and interests. And, to answer those needs, Big Bird's Egg Catch, the Sorcerer's Apprentice, and Snoopy and the Red Baron, among other titles.

Don't panic, the end has not yet arrived for the older 2600. For one thing, companies such as Parker Brothers, Activision, and the CBS Electronics don't appear prepared to abandon the legions of action gamers that still own Atari's pioneering game system. But, as the market shifts, as it is expected to, so will game themes, until the time comes when a person owning a 2600 will have to choose between trading up to a newer system of playing games with, at best, very limited appeal.

For the present, the first set of Atari "kideo" games has been released, amidst much fanfare and reassurances of wholesomeness and educational value. If they are, indeed, the wave of the future, it is only fitting that we take a closer look at them to see what, in fact, the future holds in store.

COOKIE MONSTER MUNCH

As with all CCW/Atari games, **Cookie Monster Munch** can be played at one of ten levels, each of which is specifically tailored to a child's age and aptitudes. The first three variations feature the game in its simplest form. Using four keys of a special keypad controller, which must be bought separately, the Cookie Monster must be guided through a series of simple mazes to reach cookies that have been randomly scattered throughout. Pressing a "cookie" button in the middle of the controller picks the cookie up, after which the Cookie Monster has to be maneuvered to the bottom of the screen, where in turn it's deposited in a cookie jar and registered on a large digital counter at the lower left. There's no time limit, no adversaries to overcome, and the game is frequently interrupted by an intermission screen that depicts the Monster pulling the cookies one by one out of the jar and gulping them down, as large numbers keep track of the amount of cookies consumed. The first round of game one starts with a single cookie in the maze, and each round adds another cookie to a maximum of three. Game two counts from four to six and game three counts from seven to nine. In these elementary levels the count never exceeds the maximum number for each level, although the games can be played indefinitely.



Once a child has mastered the basics of Cookie Monster Munch, he or she can be moved on to the other levels of play, which introduce more and more gaming elements into the basic maze game. Starting with game four, one or two player games are possible and point scores become cumulative from round to round. The player is required to grab as many cookies as he or she can before a shrinking time bar disappears. The intermission screen is relegated to the end of the game, where it is used to total up the player's score.

At higher levels of the game, the player controls the Cookie Kid, a stick figure that must retrieve the cookies and return them to the jar before the Cookie Monster, who is now under computer control, can track the kid down and snatch the cookie out of his hands. The highest difficulty level features the Cookie Monster/Cookie Kid competition in a maze that is only visible at the start of each round and when the child grabs a cookie.

A simple game, to be sure, but Atari has not used that as an excuse to scrimp on the design. Graphics in the maze section are up to the current standards for the 2600, with bright, attractive colors, and good animation for the Cookie Monster and the Cookie Kid. The soundtrack contains several musical themes, all well modulated and unabrasive, so that they shouldn't grate on a parent's nerves too much. But the true wonder of this game is the intermission screen. The animation has to be seen to be believed, with a well detailed, and instantly recognizable, Cookie Monster tossing cookies into his mouth, chomping on them as crumbs fly all about, and then rolling his eyes with delight. This is the sort of stuff that used to be available only in computer games, and I don't doubt that if children want to play the game at all, it will be in order to be rewarded with that screen.

Educational games have come a long way from those that awarded right answers with a happy face and wrong answers with a buzzer. Cookie Monster Munch has the benefit of the Children's Television Workshop's years of experience in entertainment and education, and Atari's superlative design facilities. The result is a game that parent and child can enjoy together.

BIG BIRD'S EGG CATCH

Like all Sesame Street games, **Big Bird's Egg Catch** is played using a special keypad controller, which has large buttons to accomodate a preschoolers inaccurate aim (in a pinch, you can also use the Video Keypad from the 2600 Star Raiders, or the old keyboard controllers, although neither of these can accommodate the colored overlays that come with each game). The game takes place in a hen house, with two or more hens perched in nests at the top of the screen. As each hen lays an egg it is then carried down to the bottom of the screen by a long chute. Unless the player positions Big Bird underneath the chute so that the eggs drops on his head, it will wind up as a mess on the hen house floor. At the game's simplest level, the player is confronted with two chutes. Pressing the left arrow positions Big Bird squarely under the left chute, pressing the right arrow places him directly under the right chute. Each egg caught is added to a digital counter displayed at the lower left. At regular intervals, Big Bird trots off the screen and the player is treated to an intermission on where the number of eggs caught up to that point is totalled up one by one, after which Big Bird does a hap-

py jig atop a platform. The game then resumes until a total of twelve eggs have been dropped in one round. The three initial skill levels of this cart, which vary only in the number of chutes that a player must handle, are all "no-lose" games. There's no penalty for dropping eggs and the primary goal of the game is to acquaint the child with the numbers from one to twelve.

Once a child has become acquainted with the basic game, he/she can be moved on to the higher skill levels. These introduce such elements as a limited number of chances before the game is ended, zig-zagging chutes that cross over each other, and increased mobility for Big Bird so that, instead of each push of the buttons landing Big Bird directly under a chute, the player has to hold down the buttons until BB has walked right beneath one. These games also feature faster playing speeds and golden bonus eggs that, when caught, are worth five points and give you one extra "chance." The highest game levels offer such niceties as opaque chutes that block your view of the eggs, so that the only way of determining where an egg will drop is to watch which chicken stands up and squawks, the sign that it has layed an egg, and then quickly trace the chute down to the bottom. The most difficult game (option 10), features chutes that are only occasionally visible and that, between those visibility cycles, completely change position.

All this, of course, is in the service of education. Controls are merely two buttons marked with left and right arrows. Numbers are large and easily recognizable. And the no-lose games are simple enough so that pre-schoolers, with the assistance of their parents, should have no trouble picking up on the game play.

Perhaps even more important, the games are fun, encouraging kids to play them over and over. Characters in both the game and intermission screens are well animated and detailed. The chickens lay their eggs to the rhythm of "Turkey in the Straw," following the Sesame Street tradition of connecting educational material with music to hold a child's attention. And with ten game variations covering a wide range of skill levels, chances are good that it will be a long time before this game is completely mastered. In fact, the higher skill levels, with their disappearing chutes, are so challenging that you might even find youself sneaking in a few rounds when no one is looking.

Big Bird's Egg Catch is everything an educational game should be: Colorful, engaging, its serious intent nicely concealed with a fun-to-play challenge. Although its goal to acquaint a child with numbers is pretty much the same as its soul-mate,Cookie Monster Munch,Big Bird seems to have been designed to inspire more repeat plays than Cookie Monster can. Although both games are good, Big Bird's EggCatch would probably be the best choice for the older child or the more advanced pre-schooler.

THE SORCERER'S APPRENTICE

Listen, I've played a lot of games that were similar to, but nothing like the **The Sorcerer's Apprentice** for the Atari 2600. Atari has taken one of the most famous adventures, the Sorcerer's Apprentice sequence from the film *Fantasia*, and turned it into a one-player game for children.

If you've seen the film, then you'll recognize that the game picks up from about the midpoint of the sequence, where Mickey, as the Sorcerer's Apprentice, dreams of himself high on a mountaintop, controlling the cosmos with the flick of a finger. At that, he's awakened by the discovery that the broom that he had enchanted in order to carry water from the well has done its job a little too efficiently, and is instead flooding the sorcerer's chambers.

The game starts out with Mickey under a starry sky where each star that drops between the two onscreen mountain peaks turns into a water carrying broom in the sorcerer's underground cavern. Using the joystick to guide him back and forth, you must maneuver Mickey to catch the stars, as well as to shoot at meteors that float horizontally across the screen. Each meteor that you hit gives Mickey two magic buckets that can help him in battling the brooms. Depending on whether or not Mickey is moving when the action button is pressed. The fireballs that Mickey uses to knock out the meteors travel either at an angle or straight up the screen. Once thrown, the fireballs can be steered into the meteors by moving Mickey to the right or left.

Below the mountains is a horizontal line that stretches across the length of the screen. The size of the blue portion of this line indicates the level of water in the sorcerer's cavern. By running Mickey off either side of the screen, he is transferred down to the cavern. Here he must clear a patch for the magic water buckets to carry water out by running into the enchanted brooms in order to eliminate them. Each bucket that can make it out the door at the top of the screen lowers the level of the water. Meanwhile, the player has to be careful to keep Mickey within the hourglass-shaped area of the screen. Straying from this area doesn't harm Mickey, but it does kick him back to the mountain screen, losing the player several precious seconds.

The game continues with Mickey alternating between the mountain and the cavern screens. Each time Mickey returns to the mountains, the game increases in difficulty, with more stars and meteors, and faster playing speeds. When the cavern is completely filled with water, indicated by a solid blue line at the bottom of the screen, the game is over. The player can select between four skill levels, ranging from a simple beginners

game to an ultra-fast "Super Sonic" version.

This is possibly the weakest of Atari's new line of "kideo" games. While the graphics are a clear improvement over the "old" Atari-design style, the representation of the characters lacks the personality needed to make you want to play the game over and over. The music from The Sorcerer's Apprentice plays on the soundtrack, but since it serves the function of alerting you each time the water level rises, you only hear a bit of it here, a touch there, so it never gets the chance to build any sort of sustained mood.

Game play can require some sharp timing and quick reflexes, but all in all it seems lacking. The screens speed up with each repetition, but when you've been through them once there's very little impetus to see them again. If Sorcerer's Apprentice is too one note to hold the attention of older children, it may also be too complex for younger children. Game play is perhaps too abstract and fast paced, even at the beginners version, for a little kid to be able to follow. Add to that the fact that the Disney organization only releases *Fantasia* on the order of once every seven years, and there may not be enough children around to even understand what's supposed to be going on.

One gets the feeling that Sorcerer's Apprentice was supposed to be something for everyone, and instead wound up being nothing for anyone. To be sure, it's not a total disaster, but in light of the other child-oriented games recently released by Atari, especially Pigs in Space and Snoopy and the Red Baron, it is a disappointment.

SNOOPY AND THE AND THE RED BARON

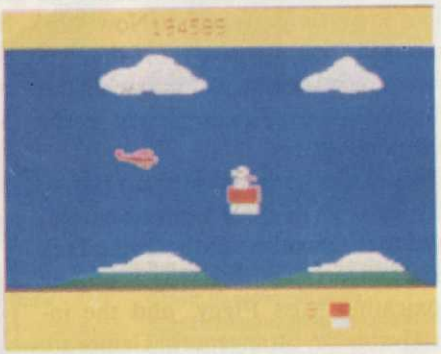
Several months ago, Atari broke with their longstanding practice of withholding the names of their game designers by announcing that composer Ed Bogas had been signed to design music tracks for a line of 2600 games (*Video Games* November '83). Snoopy and the Red Baron is the first example of his handiwork to hit the shelves. Happily, this one-player game is not only a delight for the ears, but also a joy to play.

Here's our favorite World War I flying ace. Flying high over France in his Sopwith Camel, searching for the Red Baron. Well, actually it's Snoopy atop his doghouse, flying over what looks like the Mojave Desert. And he doesn't have to search too hard for the Red Baron, since his adversary wastes no time in seeking our long-eared friend out and engaging him in battle. Naturally your job is to take joystick in hand, and maneuver our hero up, down, left and right across the scrolling landscape (Defender-style) in an attempt to defeat the evil baron. The action button activates your machine gun, which fires quick bursts that travel a short distance across the screen or a single shot than can travel the full lenght of the screen. And you need that rapid fire, since it takes eight shots to knock out one of the Baron's planes.

Similarly, the Baron has to score eight direct hits in order to wipe you out. And he is not loathe to use whatever trick is necessary to achieve your destruction, including confusing you with some sharply executed loops or dropping down from behind the clouds that are located at the top of the screen. One of the Baron's most disorienting tricks, though, is to unexpectedly rise to the top of the screen and turn into such yummies as dog biscuits, foamy mugs of root beer, and Snoopy's favorite: Pepperoni pizza. Catching one of these yummies awards you points. Even better, if you can make it through an entire mission, which requires you to eliminate a certain number of Red Barons without getting destroyed, any goodies that you catch are tallied up for extra points. If you can grab three sets of all eight goodies, you are awarded a bonus doghouse.

The game starts you out with five doghouses and there are four skill levels altogether, which vary the speed of the battle and the number of planes that you have to shoot down. The more advance skill levels also permit you to accelerate the speed of your doghouse by holding the joystick in one

First things first. You have never heard such music come out of the 2600. Remember all the fuss last year over Frogger's two-part harmony? Well, that sounds like Chopsticks in comparison to the melodies that Mr. Bogas has packed into Snoopy and the Red Baron. The attract mode features a jazzy, elaborate theme song, not unlike music for the Charlie Brown TV shows that Mr. Bogas also composes for. The game itself is introduced with The Charge of the Valkyries, and features a variety of fanfares



and signature tunes. I don't know how they did it, but the soundtrack of this game is light years ahead of any other cartridge currently available.

Don't think that because of such a fancy soundtrack, the folks at Atari have neglected both graphics and game play. Within the limitations of the 2600, this game has very well done visuals. Snoopy is instantly recognizable, and the Baron's repertoire of loops, about faces and barrel rolls have been nicely animated. Detail work includes some subtle shading to the clouds above and the mesas in the background, all the way down to a barely perceptible flutter of Snoopy's scarf.

And rest assured that, in spite of the comic strip inspiration, Snoopy and the Red Baron is no children's game. At its normal setting, the Red Baron is fast, aggressive and cunning. At the higher skill options, survival can become a goal in and of itself. In fact, most players will be best off starting off on option four, the kid's game that features the slowest speeds and a slightly less vicious Baron.

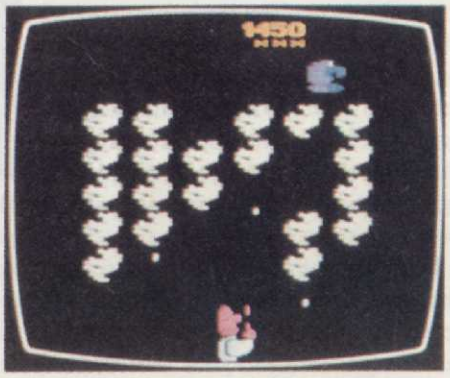
Paradoxically, the thing that Atari hopes will sell this game, the Peanuts tie-in may also be the thing that will keep away the people for whom this game is best-suited, experienced gamers who can handle the fast pace and the quick maneuvers of the Baron. If you can overcome your prejudicies, which won't take long once you've actually *seen* the game, you may just find Snoopy and the Red Baron to be a fast, superbly designed shoot'em-up.

PIGS IN SPACE

If you've been watching television at all, then you are no doubt well acquainted with Pigs in Space, *The Muppet Show*'s send up of science fiction that chronicles the exploits of the crew of the U.S.S. SwineTrek as they explore strange new worlds, seek out new life and new civilizations, and boldy go where no pig has gone before. Now Atari has taken Jim Henson's off-the-wall concept, and translated it into what has to be the first video game parody for the 2600 game system.

This one-or-two player cartridge actually consists of three separate games, keyed to the members of the Swine Trek crew: The intrepid Link Hogthrob, the intoxicating Miss Piggy, and the inconceivable Dr. Strangepork. Games are selected, Tron-style, by moving your joystick left and right to pick one of the three character silhouettes presented, and then pressing the action button to begin the game. The Link Hogthrob screen should be instantly familiar to anyone with a small amount of video game experience. It's Space Invaders, but with a difference. It this version you must maneuver Link back and forth across the bottom of the screen while firing off shots to destroy row and row of deadly, vicious, heartless, blood-curdling... chickens? That's right, those are hens above Link's head, dropping missiles (or some sort of ancient gypsy curse) that can literally make Link chicken out upon contact. And if you're wondering just what has spurred these birds on to attack, just take a look at the mother ship which appears occasionally at the top of the screen. The saucer-like ship has been shaped in a likeness of Gonzo the Great, the Muppet Show's resident wierdo and a confirmed Friend of Chickens. If you're in the mood, you can zap Gonzo for bonus points, but you're best off concentrating on keeping Link, who moves with porcine slowness, from being hit with the missiles.

The Miss Piggy screen is a take-off of Frogger, with a few changes to make it more "appetizing." Here you must guide Miss Piggy from the bottom of the screen to a rendezvous with the SwineTrek, which floats from left to right across the top of the screen. Barring her way are alternating layers of rampaging spaghetti and meatballs which, if collided with, send her tumbling back down to the next lowest level. The spaghetti is inedible, but the meatballs...that's another story. If one of these gigantic spheres threatens to overtake Miss Piggy, you need only face her towards the Italian meteor and press the action button. This activates Miss Piggy's considerable gustatory powers and enables her to swallow the meatball in one, effortless gulp. Don't dawdle too long dining on meatballs though, because if the SwineTrek is permitted to exit off the right side of the screen, your goose... er, pig is cooked.



The Doctor Strangepork screen is actually something of a misnomer, since it's actually a Vanguard-style shoot-out involving the U.S.S. SwineTrek. You're goal is to travel the full length of a vertically scrolling corridor, while eliminating the many Gonzos who stand on ledges and hurl missiles at you. Your ship has full run of the screen, but cannot backtrack: You are continually travelling in an upward direction. Since the Gonzos stand on ledges at the edge of the screen or on center dividers that are not vulnerable from the bottom, equipping the ship with missiles that only fire straight ahead would be totally useless. Instead, the good Doctor Strangepork has invented a sort of boomerang missile. Projectiles that travel upward a few inches, arc over to either the left or the right, depending on which direction the joystick was moved last, and then fall off the bottom of the screen. Timed right, you can easily dispatch Gonzo as the missiles makes its U-turn or as it drops down. The slightest brush against the jagged walls or, of course, getting hit by your own missile on its return trip, spells your extermination.

Bonus points are awarded for the successful completion of each screen. You start off with five lives and receive a bonus life for every 10,000 points scored.

It seems that Atari has aimed a bit too low with Pigs in Space, designing it strictly for the kids market while ignoring the fact that the Muppets can appeal on two levels to both children and adults. The skill levels for all three games are relatively easy. This is especially true of the Doctor Strangepork screen. Once you have gotten used to the boomerang missles and have memorized the locations of all the Gonzos, which doesn't vary from level to level, the screen is a breeze to get through. (Handy hint: If you are approaching a center divider, *always* bear to the left.) The Miss Piggy screen is the toughest. Past the first level, considerable skill and timing is required to get past the rapidly moving pasta and meatballs and up to the ship. More often than not, a mistimed gulp will send poor Piggy on her unhappy trip all the way down to the bottom of the screen.

But the true jewel of this cartridge, believe it or not, is the Link Hogthrob screen. In and of itself, it's a good game, with the best graphics and sound of all three screens. Beyond that, it is also the most faithful to the Muppets concept of taking the cliches of whatever medium is being satirized, and setting them on their ear. In this case, the folks at Atari (presumably with the help of those at Henson Associates) have taken video gaming's most ubiquitous concept, the slide-and-shoot, and carried it to it's logical conclusion, the point where the only conflict that hasn't been depicted is a war between pigs and chickens.

Gamers who have probably had their fill of the genre by now will no doubt first be somewhat stunned by the sight of this battle. But anybody who has played enough home video games will recognize and enjoy the screen for what it is: An effective comment on the all-too-derivative nature of many video games.

Whether it's worth shelling out money for that comment I'll leave to your judgement. Experienced gamers may find Pigs in Space too easy to pose much of a challenge over an extended period of time. In spite of its somewhat sophisticated swipes at the video game industry, this game is much more for beginners. In that sense, it is much like the other output of Henson Associates: Something ostensibly for youngsters that adults can enjoy at a totally different level. ▲

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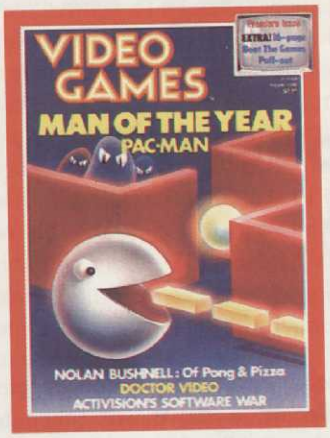

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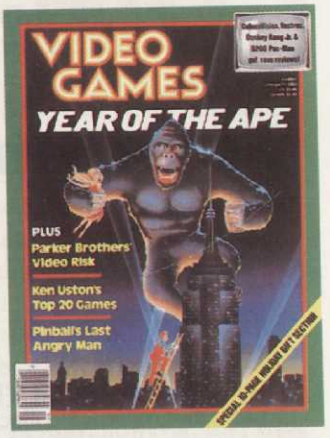

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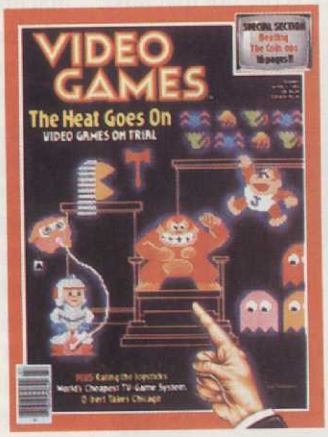

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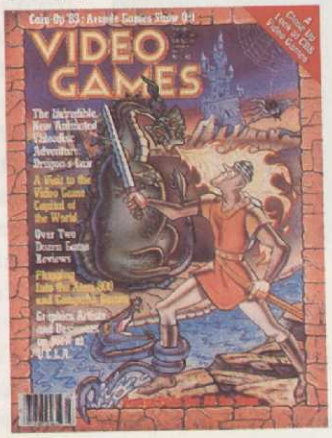

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COIN-OP COLLECTIBLES

From Vintage Wurlitzers To Modern Day Video Arcade Games

By Russ Jensen

In this day and age a term we hear more and more is "collectible." And what is a collectible? Well it can be almost anything, that is, anything that a human being decides he or she wishes to accumulate for some form of personal pleasure. A collectible can be as large as an automobile or as small as a button.

You can't have collectibles, however, without one important adjunct, the collector, who can be almost anyone from a small child to a famous personality or multimillionaire. All collectors have one thing in common, an almost overwhelming desire to acquire their own personally chosen collectible. At this point, a distinction should be made between a "true collector" and the "speculator" or "hoarder." The true collector collects things because of the personal enjoyment he gets from his hobby. He also generally enjoys sharing his collection with others and loves to discuss his hobby with anyone he can. The hoarder or speculator, on the other hand, collects only in the hope of monetary gain, or in the case of some hoarders, the selfish act of pure possession.

Collectibles indeed come in all shapes and sizes. Most people are aware of the common collectibles such as stamps and coins or even automobiles, but few really know the vast number of diverse items which people collect. Only a visit to a large show can give one an insight into the vastness of the collectible scene.

In the past decade or so many people have become interested in coin operated devices as collectibles and the number is growing. Coin machines also come in all shapes and sizes, from small counter top vending and game devices to large mechanical orchestra machines. Almost all varieties of coin-ops are collected by someone or other.

Slots

Probably the most widely collected coin operated device is the slot machine.

The Wurlitzer 1080, circa 1946 from Ron Tyler collection.

This category includes the familiar one armed bandit type machine (referred to by most collectors as bell machines) and the turn-of-the-century upright or color wheel machine.

Not too many years ago even owning such a machine was a crime in almost every state. This, however, did not stop the avid collectors who were forced to operate undercover to carry out their fascinating hobby. Then, spurred on by a police confiscation of some rare machines being restored by a Los Angeles area collector, a move was taken to amend the California penal code to allow collectors to own antique slot machines. After considerable work by "friendly" legislators, greatly aided by California slot collectors, this finally came to pass. After Sept. 13, 1976 the ownership of slot machines manufactured prior to 1941 became legal provided, of course, that they were not used for gambling.

This began the era of antique slot machine legislation. With California as an example, other states one by one started to pass similar legislation as local legislators were prodded by their state's slot collectors. Some states followed California's pre 1941 definition of antique slot machines. Others used a more realistic definition of "25 years or older." Today, approximately ten years after California was made legal, 28 states allow collecting of antique slot machines, four have unclear laws regarding them, three allow only trade stimulators (more about these shortly), and only 15 states still ban them, but their number will probably decrease in the future.

Trade Stimulators

Somewhat akin to the slot machine is the so called trade simulator. These counter top games are often almost identical to a slot machine with one important difference, they do not automatically dispense cash prizes when a player wins. These games come in many forms and were generally used by small merchants to promote sales or attract customers (hence the name trade stimulator).

A person would use a coin to operate the machine with the knowledge that if he did not win he would still receive some

item of merchandise (often a gum ball) worth the value of that coin. On the other hand, if he won the merchant would give him some item or items of merchandise of a greater value. A common type of trade stimulator was in the form of a small wheel of fortune. These were often used in cigar stores. The player would spin the wheel (usually by inserting a coin) and when it stopped it would indicate the number of cigars he would receive, more often one but occasionally more. This helped the cigar store's business as many people would buy a cigar (by playing the game) hoping to win additional ones.

Because of the wide variety of these games, and their often novel game ideas, these machines are highly collectible and have many avid collectors.

Jukeboxes

Certainly one of the very popular coin-op collectibles these days is the jukebox. These once familiar items seem to be slowly fading from the American scene. The "golden age" of the jukebox (at least as far as aesthetics is concerned) was the 1940s. During this period extensive use was made of brightly colored plastics and lighting employing changing colors. Many jukebox cabinet designs of that period were truly works of art.

Of all the various brands of jukeboxes, Wurlitzers are generally the most collectible. This is probably due to the innovative cabinet designs (of wood and plastic) of that company's chief designer during the golden age, Paul Fuller. During the period from 1941 through 1950 he designed many models most of which have become real "classics." One of his impressive designs was the model 850, known as the Peacock because it had colored polarized light animation portraying that bird.

The best known collectible jukebox is the Wurlitzer model 1015, also designed by Mr. Fuller. This machine is the jukebox that is very likely familiar to the average person as it is used today in many television commercials, movies, and even depicted on TV cartoon shows. If a person wanted to buy just one classic jukebox this is the one he would probably buy, provided he could afford its whopping pricetag. It is characterized by its rounded top, revolving color wheels and bubble tubes. A jukebox collection is really not considered complete without a Wurlitzer 1015.

Even though Wurlitzers from the golden age appear to be the most collectible jukeboxes, those from other manufacturers and time periods are also sought by many collectors. During the golden age other manufacturers, such as Seeburg and Rockola, also made some quite attractive models. The Rockola 1422/1428 series is in fact probably the second most familiar 78 RPM jukebox to the average person due to its appearances in TV shows and motion pictures. Some collectors like the models of the early thirties which were the pioneer jukeboxes. Other collectors enjoy the 45 RPM machines made in the fifties and early sixties. To many, Wurlitzer leads the collectibility list because of its innovative and attractive designs, but Seeburg is not far behind. It should finally be noted that collecting jukeboxes not only appeals aesthetically but has the added excitement of allowing one to listen to music with the same sound it had to people of its time.

Wurlitzer 1100, circa 1949 from Ron Tyler collection.

Mechanical Music

The forerunners of the jukebox were the various forms of coin operated mechanical musical instruments. The earliest of these were large music boxes made around the turn of the century and fitted with a coin mechanism to allow people to hear music by the insertion of a coin. Next came coin operated "player pianos" which were similar to the popular home models except they were powered by electric motors (instead of foot power, as in the case of most home players), and the user could not change the music roll which determined what song would be played. Generally, these machines used music rolls, each containing 10 tunes, with the next tune in sequence being played each time a coin was inserted.

Collectors of these machines have come to refer to them as Nickelodeons. This term was not used for these devices during their heyday, however, they were simply called coin pianos. The term nickelodeon was used in those days to refer to a silent movie theatre which charged a nickel admission. The use of that term to refer to coin operated pianos originated with the lyrics of a popular song of the fifties, *Music, Music, Music*. The term has also been used in the past as a nickname for the jukebox. Incidentally, two of the famous jukebox manufacturers, J.P. Seeburg, and Rudolph Wurlitzer, got their starts, around the turn of the century, manufacturing coin operated pianos.

A larger cousin of the nickelodeon was the so called Orchestrion. These were basically coin operated machines containing a piano and several other additional mechanized instruments such as pipes (some producing violin or flute sounds), xylophones, drums, cymbals, and other percussion devices. These machines were often used in dance halls in the early 1900's in lieu of an orchestra. Today, they are quite valuable collectors items demanding high prices for most models in reasonable condition.

In addition to these piano based instruments, coin-op versions of other musical instruments were produced in the early part of this century. Two of the most noteworthy were the Violono Virtuoso, a coin operated automatic violin player produced by the Mills Novelty Co, and the Encore Automatic Banjo by the American Automusic Co. All in all, coin operated musical instruments come in many varieties and have an avid core of collectors.

Another class of coin machine collectibles are the types of coin-ops referred

to as Arcade Machines. These machines were made strictly to provide entertainment and amusement and were found in the Penny Arcades which flourished from around the turn of the century until recent times, although the Video Arcade of today is actually a modernized version of this type of establishment.

Arcade machines can generally be divided into three major classes, fortune tellers, peep shows, and games. The former class includes machines which give your horoscope, tell your fortune, or supposedly tell a person something about his or her personality. Probably the most familiar of these types of machines is the granny fortune teller which consists of a large cabinet, the upper half of which contains a replica of the head and upper half of the body of an old woman (a fortune teller). When a coin is inserted a printed card is dispensed containing your fortune. This is often accompanied by a mechanized movement of the mechanical woman's arms.

Also included in this first class are the Personality Meters and Love Testers. When a coin is inserted in one of these small machines a lighted panel on the front of the machine will indicate your personality type (shy, vivacious, etc.) or your love rating (Romeo, clod, etc.) usually in quite comical terms. Somewhat akin to these machines are the strength testers in which, after the deposit of a coin, a person squeezes some handle grips as hard as he can and a dial registers his strength rating.

Peep Shows were machines, especially popular in the early 1900's which, for the deposit of a coin, allowed a person to view either a very short motion picture of a still view. The pictures were usually billed as being somewhat racy but mostly this was a come on and what the person actually saw was usually quite mild.

The game type arcade machines usually simulated a popular sport or had a shooting theme. Baseball machines were quite popular and generally resembled a pinball machine except that in many models each ball was pitched (usually released onto the playfield via a ramp from underneath) and batted by a mechanical bat controlled by the player pressing a button. Most of these machines had animation units which simulated players running the bases. Other sports simulated by arcade machines included football, basketball, and hockey.

Caille upright color wheel machine.

Other popular game-type arcade machines allowed the player to simulate shooting some type of gun. The "rifle gallery" machines, popular since the late 1940's, allowed a player to simulate shooting a rifle at "targets" behind a glass, thus emulating the popular carnival shooting galleries. Similar machines using pistols were also made. There were also many games made where the player shot down aircraft with a machine gun (especially popular during World War II) and also submarine and other similar games with war themes.

Venders

Of the myriad types of coin operated vending machines which have appeared over the years, only one general type appears to have caught on with collectors. These are the machines that dispensed chewing gum or peanuts. Most of the collectible machines of this type were manufactured between 1910 and 1950, with the 1920's accounting for many of the popular models.

These machines came in a variety of shapes and configurations. The machines that seem to be the most collectible are those that dispensed gum or peanuts. Most, if not all, of the machines of this type had containers for the merchandise which allowed viewing, either using a glass globe (often of a rather attractive shape) or a square glass sided compartment. Other collectible gum venders, such as the popular "Chicklets" machines, dispensed wrapped sticks of gum.

While some collectors may collect other types of vending machines, the gum and peanut machines certainly seem by far to be the most widely collected.

Pinballs

Another type of coin machine which is collected with enthusiasm by many these days is the pinball machine. Most people are familiar with these games as they have been around for over 50 years, and many may wonder how anyone could collect something that large. This,

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however, does not seem to bother the pinball collector. Many people today also collect automatic musical instruments and pianos are larger than pinballs!

Pingames over the years have come in many sizes and technical complexities. Some collectors prefer the very early machines (made in the early thirties) which were strictly mechanical, some very simple and others with extremely clever mechanisms.

The introduction of electricity to pinball came in 1934 when young designer Harry Williams used dry cell batteries to power a simple electric ball kicker in a game called Contact. Within the next several years the use of electricity (first from batteries, then house current) in pinball increased. By 1941 pinballs had brightly lighted backboards, lighted bumpers on the playfield, and had evolved into one of the technical wonders of the day using advanced electromechanical techniques.

World War II severly curtailed pinball production, but when it ended manufacturers resumed where they had left off. Then, late in 1947, came a startling new innovation. The flipper, a player controlled bat-like device which could alter the course of a ball being played, was introduced by D. Gottlieb and Co. on a game called Humpty Dumpty. Within three or four months all new pingames had flippers. A little over a year later pop bumpers (bumpers which could forcibly repel a ball when it struck them) were added making an exciting action game out of pinball. This led to the fascinating and colorful games of the 1950's (pinball's golden age). Many collectors today seek these flipper games of the golden age, yet others prefer the earlier flipperless models.

Pinballs in the sixties and seventies became more modern in appearance but many games, especially those from the early sixties, had fascinating and challenging play features which make those machines highly desireable to many collectors. In the latter part of the seventies pinball started going solid state using computer circuitry in the place of the traditional electromechanical components. While most collectors today believe that only electromechanical games are collectible, a few are starting to add some outstanding electronic machines to their collections. As electromechanicals become harder to get and solid state games become older, I am sure that collectors will soon start looking for electronic pins to add to their collections.

Rock-Ola's classic 1933 pin game Jigsaw.

Videos

What about the new kid on the coin-op block, the video game? Have people started collecting these relatively new machines? I am sure that there are probably a few people who have either started collecting videos or have added one or two to their collections of other coin-op devices. I believe, however, that more and more people will start collecting these machines as time goes on. Examples of videos which I would consider collectors items at the present time would be such games as Pong (the first commercially successful coin-op video game), Space Invaders (the game that started the first video craze), Asteroids, and of course Pac-Man.

Pac-Man is specially significant and not only did it spawn a family of games (Ms. Pac-Man, Baby Pac-Man, etc.), but also it gave the world Pac-Man fever. Pac-Man products have sprung up all over including such diverse items as breakfast cereal and a room deodorizer. A multitude of such products now abound and they themselves represent a class of collectible, although not coin operated.

We have now briefly discussed each of the major classes of coin-operated devices which are being collected today. Most collectors specialize in one type of device, but often a collector may have one or more items of another kind in his collection. A future article will deal with the support system which aids coin-op collectors. This includes such things as books, magazines, shows and auctions, dealers, organizations, etc. Additional articles will describe the collecting of a given class of coin-op collectibles in detail. As you can plainly see, the field of collecting coin operated devices is extremely varied and there is some type of coin-op device to appeal to almost anybody. ▲

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GOING FOR THE GOLD!

At last winter's AMOA, Centuri and Konami broke ahead of the competition, leaving the rest of the coin-op industry behind trying to catch up when they introduced a game destined to be the big winner of 1984. In the ensuing months Track & Field has proven its worth with a new physical demand challenge unique to video games. All across the country this arcade sensation has been putting players to the test with six Olympian events of speed and timing.

Now Video Games Magazine, in cooperation with Centuri/Konami, is pleased to present a contest of mental dexterity and knowledge for those of you who are game enough to give it a shot. The grand prize? Your very own full-size Track & Field arcade game, worth $3,000.

* * *

All you have to do is answer correctly the questions in our **Track & Field Trivia Go For The Gold Contest.** Just fill out the entry form on the following page, or use a blank piece of paper and mail your answers to Go For The Gold Contest, Video Games Magazine, Suite 6204, 350 Fifth Avenue, New York, New York 10118. Employees of Pumpkin Press, Centuri, Konami, their subsidiaries or affiliated companies, advertising agencies, and their immediate family members are ineligible to participate. Contestants with all the correct answers and the earliest postmark will be eligible for the grand prize. In case of ties, the decision of Video Games Magazine judges and editors will be final.

I THE 100 METER DASH (all answers worth 1 point each)

With its dual red, run button action, Track & Field's first event is a test of pure rhythm and raw speed as you send your video athlete down the track in a race against the clock. So too, since 1896, has the Olympic competition in this race been as exciting pitting the strength and speed of some of the fastest humans of all time.

1) In the award winning movie "Chariots of Fire" one of the lead characters wins the 100 meter dash and in the process sets a new world record. Portrayed by actor Ben Cross, what was this real life gold medal winner's name?
2) What year did these Olympic games take place?
   A) 1920
   B) 1924
   C) 1928
   D) 1916
3) You've seen the world records on your local Track and Field machine, but what was the winning time for this gold medal runner?
   A) 10.2 seconds
   B) 10.4 seconds
   C) 10.6 seconds
   D) 10.8 seconds
4) Since 1896, United States runners have won the gold medal in the 100 meters twelve different times. But how many times has the U.S.A. swept the competition, winning the gold, silver and bronze?
   A) once
   B) twice
   C) three times
   D) never
5) He was known as the "fastest human in the world" and in the 1964 Olympics, held in Tokyo, he raced to the gold in 10.0 seconds in the 100 meters. Later he would enjoy an illustrious career with the Dallas Cowboys. What was the name of this gifted athlete?

II THE LONG JUMP (all answers worth 2 points each)

The second event in Track & Field poses a much different challenge than the 100 meter dash. Here the objective is to not only build up enough speed on the approach, but, at just the right time, hit down on the white jump button to propel your video athlete up and outward as the crowd in the background looks on. The amount of time you press the white button is also important, since it will determine the angle of your jump where precision is everything during your three qualifying tries.

1) In the nineteen Olympic competitions since 1896, American athletes have won the gold medal in the long jump an incredible sixteen times.
   TRUE _____
   FALSE _____
2) In 1968, Bob Beamon astounded the world with an unbelievable long jump that measured 8.90 meters, or 29 feet 2½ inches. What country was the site for his incredible record breaking performance?
3) Another American athlete had the distinction of winning the gold medal in the long jump in 1960. He then won the silver in the 1964 Olympic games and the bronze in the 1968 competition. What is this three time medal winner's name?
4) The United States has swept all three medals in the long jump how many times?
   A) once
   B) twice
   C) three times
   D) never
5) In the 1936 Olympic games, held in Berlin, one American athlete stood out as a dominant figure, winning four medals, including the gold in the long jump. His name was?
   A) Grover Cleveland Alexander
   B) James Cleveland Owens
   C) Jesse James
   D) Jesse Jackson

III THE JAVELIN (all answers worth 3 points each)

Track & Field's third event is the javelin and the same skills you've mastered in the long jump are necessary again, only different. You still have to build up speed in your approach, but the distance to run is much shorter. In addition, at the point of releasing your javelin, you'll need to hold down on the white button a bit longer in order to increase your throwing angle.

1) The United States has won the gold medal only once in this event since it became part of the Olympic games in 1908. In 1952 an American threw the javelin 73.78 meters, or 242 feet ½ inch. What was his name?
2) In all, American athletes have won medals in the javelin how many times?
   A) once
   B) three times
   C) five times
   D) seven times
   E) none of the above
3) In the 1948 Olympic Games held in London, his father had won the gold medal in the hammer throw. Twenty-eight years later, in Montreal, the son won the javelin for Hungary with a world record of 94.58 meters, or 310 feet 4 inches. What was the name of this second generation medal winner?

IV THE 110 METER HURDLES (all answers worth 4 points each)

The action picks up considerably with Track & Field's next event—the 110 meter hurdles. Not only must you build up the speed of your video athlete to get him down the track under the qualifying time, but timing is also vital in jumping over the ten, evenly spaced hurdles which stand in your way.

1) Since 1896, the 110 meter hurdles have been staged nineteen times. How many times have American athletes won the gold in this competition?
   A) five times
   B) seven times
   C) ten times
   D) fifteen times
2) How many times have American athletes swept all three medals in this event?
   A) two times
   B) four times
   C) six times
   D) eight times
3) In 1956 and again in 1960 an American won the gold medal in the 110 meter hurdles. What was his name?

4) What year did the U.S.A.'s Rod Milburn set the 110 meter hurdles record of 13.24 seconds?
   A) 1968
   B) 1972
   C) 1976
   D) 1980

V THE HAMMER THROW (all answers worth 5 points each)

Track & Field's fifth event is the hammer throw. All you have to do is press the run button once to get your video athlete whirling around, and then precisely time your hitting of the white button to send the hammer on its way. It's a matter of building up enough speed and then releasing at the correct time, but you get three attempts to qualify.

1) From 1900, when the hammer throw was first held in the Olympic games, through the 1924 competition, the United States won the gold in the event six straight times. But since 1924, how many other times have American athletes won the gold in the hammer throw?
   A) one time
   B) two times
   C) three times
   D) never
2) How many times have American athletes swept the medals in the hammer throw?
   A) one time
   B) two times
   C) three times
   D) never
3) Throughout the history of the Olympic competition, no athlete has ever thrown the hammer longer than 82 meters?
   TRUE _____
   FALSE _____
4) The hammer throw is a test of strength, speed and timing, but how much does the hammer itself weigh?
   A) 10 pounds
   B) 12 pounds
   C) 14 pounds
   D) 16 pounds

VI THE HIGH JUMP (all answers worth 6 points each)

Centuri /Konami's last event in Track & Field is the high jump. Once again your control is similar to the hammer throw where all you have to do is press the run button to get your video athlete moving down his approach to the bar. At just the right time, press the white button to send your competitor upward; then press again to set your clearance angle and hope for the best. You'll get three faults and the bar will be raised once you've qualified at a given height.

1) Since 1896 the Americans have won the gold in the high jump how many times?
   A) one time
   B) three times
   C) six times
   D) nine times
   E) twelve times
2) The American athletes have swept all medals in the high jump competition how many times?
   A) one time
   B) two times
   C) four times
   D) five times
   E) never
3) In the 1968 Olympic games a United States high jumper brought his unorthodox style to the competition and won the gold medal. What was this champion's name?
4) The Olympic record in the high jump competition is 2.32 meters by Gerd Wessig in the 1980 games?
   TRUE _____
   FALSE _____

Track & Field Trivia Go For The Gold Contest Entry Form

Name _____ Age _____

Address _____

City _____ State _____ Zip _____

I The 100 Meter Dash

1) _____
2) _____
3) _____
4) _____
5) _____

II The Long Jump

1) _____
2) _____
3) _____
4) _____
5) _____

III The Javelin

1) _____
2) _____
3) _____

IV The 110 Meter Hurdles

1) _____
2) _____
3) _____
4) _____

V The Hammer Throw

1) _____
2) _____
3) _____
4) _____

VI The High Jump

1) _____
2) _____
3) _____
4) _____

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Arcade Games

Playing Tips and Strategies

By Steve Harris

M.A.C.H. 3

M.A.C.H. 3, the first laser disc game by Mylstar, is revolutionary in two ways. Not only was it the first live action disc game to be released, but it also features two games in one. The fighter phase provides a head-on view over a desert, through canyons over lakes, and other types of terrain. While not as exhilerating, the bomber scenario provides a realistic backdrop of cities, naval bases and refinaries, to name but a few.

The technology employed in M.A.C.H. 3 differs from that of Dragon's Lair in several ways. Besides the fact that it is not animated, M.A.C.H. 3 is vastly more playable, allowing a full field of motion and not just one correct way to play.

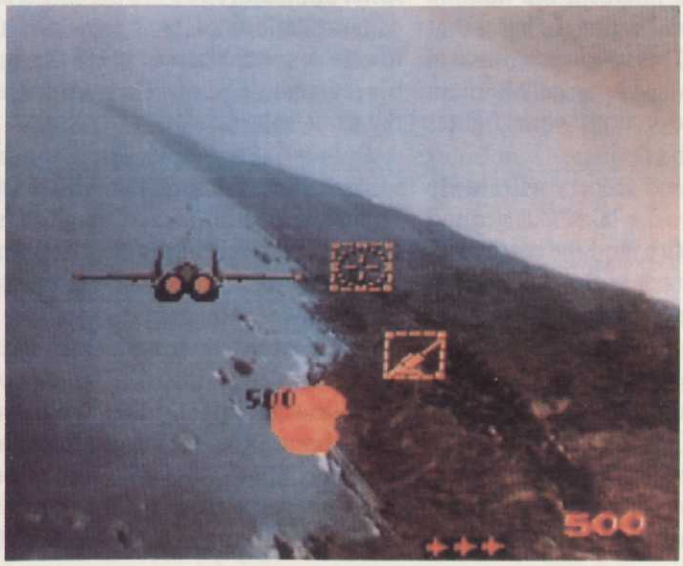
After you deposit your money, the game will begin by giving you the option of playing the fighter or bombing sequences. While the fighter run is faster and more fun to watch, the bombing run is easier, with a slower pace. Once you have made your decision you will be put in control of the MACH (Military Air Command Hunter) aircraft, with a mission to destroy the enemy fortifications.

As you fly along (in either phase) you must position your fighter to hit the ground targets which are super-imposed onto the film. Some of these are represented by mere boxes, while others have guns shown within the targets. Destroying these ground targets awards 500 points and prohibits it from launching any type of return fire. As you progress above the terrain you must avoid the enemy's in-coming missiles and flak, or destroy the projectiles before they reach your ship. In later phases, air targets will appear (helicopters in the fighter mode and combat jets in bombing scenario.) In either case, these enemy ships will bombard the MACH and attempt to destroy it.

Strategy: M.A.C.H. 3, similar to most games, has strategies built around patterns and memorization. In both sequences the order of events is always the same. That is to say, if the targets appear at one location this game, they will always appear at that identical location every time you play.

Your only enemy is really the missiles and flak. Strategies are therefore built around the idea that if you eliminate the target before it can fire, it is no threat. And, if nothing ever threatens your plane, you'll go unscathed through each phase.

M.A.C.H. 3 however makes this increasingly difficult to accomplish. By moving the terrain away from your ship



or speeding it up, the game prevents you from destroying anything. And, by allowing the ground implacements to return fire at a faster rate, you must concentrate more on the projectiles than on the targets. There *are* ways around this, however, by learning the correct positioning of your craft to destroy ground installations while making it possible to avoid the enemy missiles.

Fighter Strategy: This game is the hardest of the two. It is lightning fast, with never a break in the action. It requires you to maneuver the MACH at supersonic speeds above the surface of the Earth, blasting anything in sight.

You begin by rocketing over a flat stretch of desert terrain. Move your Hunter to the lower-left corner of the screen and destroy the targets approaching from that location. The next set of implacements will enter the center of the board. The screen will pan a bit, then additional reinforcements will also materialize in the middle of the board.

Following the first stretch of land, the scenery will change and the first primary target, an oil refinary, will come into view. Most of the targets will appear around the structure. You'll also witness

return fire in the form of homing missiles. These may be avoided or destroyed with the guns.

After attacking the refinery your airplane will zoom into the clouds for a confrontation with an enemy helicopter. Destroy the chopper by flying directly in front of it and firing a salvo of missiles.

Once the airborne encounter ends, you'll find the MACH over a length of mountainous terrain. The majority of the targets will be located in the center. A bridge will be the next attack location. Like the refinery, most of the opposition bases will be in the general vicinity of the bridge itself. Watch out for the incoming missiles and destroy the elevated structure.

Clearing the bridge will bring you over a flat section of desert once again. This is where the game becomes more difficult. Position your fighter in the center of the screen while flying over this piece of ground. The missles fired from the enemy are "smart." They are capable of homing in on the MACH with great proficiency. Staying in the middle and sliding back and forth will allow your jet's missles and guns to eliminate all of the projectiles, as well as destroy a significant amount of the ground-based targets.

Successfully maneuvering over the flat plains will lead the MACH into a narrow valley. Continue through the air with your plane again positioned in the center. This will intercept the homing missiles, while eradicating the bases that launched them. The narrow canyons will slowly open into a wide gorge. Maintain this same strategy until your fighter swoops out of the ravine.

The background scenery will slowly change to that of a lake. All ground bases will cease fire, and the enemy will launch a new attack in the air. Though destroying the land installations can be attempted, you should focus your attention on the fighters which will slowly descend from the air. These craft will glide downward and explode, unleashing a deadly phosphoric trail. Avoid the fiery tails by ascending or descending at the appropriate times, staying away from the right or left sides of the board. The planes may be destroyed with missle fire for 100 points each.

After engaging the fighters for a short period of time you will enter a radioactive zone (noticeable by the strange coloring of the landscape) and the enemy jets will break off their attack. Your next field of battle will be over another desert. Several more helicopters will appear before the ground targets materialize. This desert is very similar to the earlier ones, although the enemy missiles do not home in with great precision.

After traversing the desert area, your fighter will come upon an airport. Position the MACH in the lower-right hand corner to eliminate the stranded aircraft.

Once you make it to this point, you will come against additional ground targets, firing smart missiles. Return to the strategy of gliding back and forth in order to destroy the missiles as they appear. The remainder of the game is made up entirely of these targets, an occasional helicopter, and a few attacks by the flaming planes. You'll fly over more deserts, through mountainous regions, into radioactive zones, skim industrial plants, and enter frozen areas. Continue to use the strategies outlined for each section as you come up against the different foes.

When you have completed your mission (approximately 12 minutes) your Military Air Command Hunter will descend upon the runway to the cheers and congratulations of your crew and the tower. A special bonus of 1,000 points per remaining plane will be awarded and the game will end.

Bomber Strategy: The Bomber scenario differs in several ways from the Fighter sequence. Even though it is a slower, lower scoring game, the bombing run is more complex in strategy and game play.

You begin with your Hunter flying above an enemy airport. Guiding your plane to the center of the screen, you must bomb the targets before they scramble. Stay in the center and release a payload of warheads to destroy the planes, then immediately move right.

Favor this right side to avoid the numerous flak bursts. When the scenery changes to the open highways, repeat the process. Identify the targets, release your explosives, then move quickly to the extreme right or left to avoid the incoming missiles.

After passing over a few oil tanks and another interstate, your aircraft will come upon a fleet of ships anchored just off shore. Once again, bomb the boats, then run to one side of the screen. Once you've passed over the naval base, the enemy will unleash a new weapon. Cruise missiles will ascend from below the top in an attempt to strike the MACH from behind. When you hear the missiles coming, rise up the screen and dodge them as they appear. The projectiles can not be destroyed with bombs, but they can be eliminated with guns from behind. When a missile passes, move under it and fire for 200 points.

Next, you will come up against another series of ground targets. The flak will be present once again, so use the previous strategy to avoid it. Following this, your fighter will encounter additional boats. The flak will clear and your only enemy will be the camouflaged fighters. These airplanes appear at the top of the board, move slowly downscreen, then off to the right or left. If a plane gets below your airship it will fire two missiles forward, then exit the screen. Before appearing, each of the enemy planes will be represented by a blue "warning" silhouette. Under this image the airplane will enter. Fly below this point and use your guns to destroy the fighters as they appear. When fighting the planes, use this strategy while bombing continuously to knock out as many ground locations as possible.

When approximately 30 seconds pass, the cruise missiles will join the jets in battle. Rise to the center and keep an eye out for any missiles approaching from below. Destroy as many planes as you can, just be sure that nothing is under your fighter while you're waiting for the enemy jets to appear.

The planes will depart after you strafe your rival's supply depot and bridge. The flak, however, will return. You must pass over a carrier and supertanker, as well as several fuel storage islands. Maintain the flak strategy of staying close to one side of the screen. While watching your rear flank to avoid any confrontation with the cruise missiles.

Once you fly over the military industrial complex, the background will change and the MACH will enter a radioactive area. Besides the strange coloring of the terrain, you'll quickly notice clouds of radioactivity filling the airspace around you. You must avoid these indestructable spheres while bombing the targets below. Stay at the bottom of the board and away from the clouds.

The radioactivity will thin out somewhat to be joined by additional missiles. Reposition your fighter in the center of the playfield. Dodge right and left whenever on object threatens, then return to the center.

Next, you will return to a long stretch of highway. At the onset, your enemies will be planes and flak. Missiles replace the fighters after a minute or so, but the planes soon return. Try to eliminate as many aircraft as possible while avoiding the flak bursts. Position the MACH in one corner, wait for the fortifications to fire, then glide to the opposite side away from the flak. Keep alert, you'll have dangers surrounding you from all parts of the screen.

Your final battle occurs over the ocean with another supertanker as well as several fishing travelers and a sailboat which all emit a stream of flak. Avoid the explosions successfully and the war will end.

As in the fighter sequence, when you prepare to set the MACH down on the runway, you'll receive several congratulatory messages from the ground tower before landing. A bonus of 1,000 points is also awarded for each airplane remaining at the end of the game, similar to the Fighter phase.

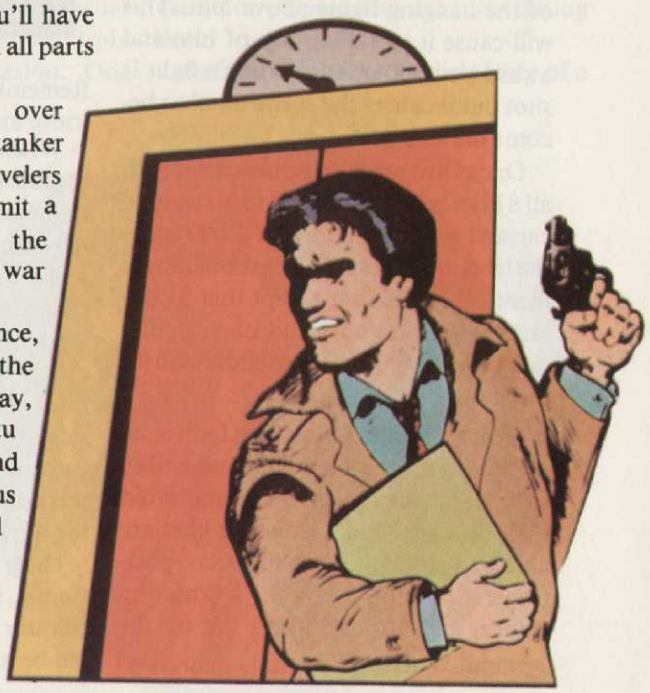
ELEVATOR ACTION

Elevator Action is the latest game from Taito that uses colorful imagery and a unique game theme to attract attention. In this one you assume the role of agent 17, code named Otto. As Otto you must gather up the top secret briefcases located throughout the building and escape to your waiting car in the basement.

Your only adversaries are the evil KGB agents that inhabit the hotel. As you advance down the building, the KGB will come out of their hotel rooms in an attempt to get rid of your menace. Although they are harmless to touch, the enemy packs a powerful one-shot pistol capable of killing Otto instantly, no matter where they hit him.

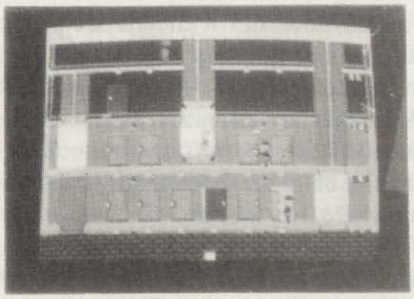
As agent 17, you have been given many offenses in helping you retrieve the secret documents. You're armed with a rapid fire submachine gun, capable of firing up to a 3-shot burst, annihilating any spy for 100 points. You can also play Bruce Lee and kick the enemy, killing them with a well-placed boot in the side, for 150 points.

Although you can hunt the enemy agents for points, your main goal is to retrieve the attache cases located behind



the red doors. These may be collected for 500 points each. *All* must be picked up before Otto is allowed to drive away. Even though the red doors are often placed on different floors, the basic layout of the building remains the same for the entire game.

Otto begins on the 30th floor, to the left of the main elevator. You can, however, place him in the elevator to gain control of its movement and proceed to the lower levels. Agent 17 may also be



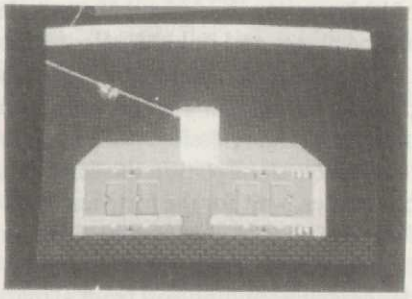
positioned on top of the elevators, though you cannot control them and run the chance of being pressed between the top of the elevator and the elevator shaft. Also, be careful not to run into an open elevator shaft or Otto will fall off and die.

While on the elevator you're given another offense against the enemy. You can crush a spy by carefully shooting one of the hanging lights above him. This will cause it to fall on top of him and award you 300 points. When a light is shot out it causes the entire hotel to become dark as well.

Once Otto reaches the basement with all 8 briefcases, he will run to his waiting car and receive a bonus of 1,000 times the level you're on. The next building is identical to the first except that it contains 9 red doors instead of 8. Subsequent rounds contain one additional attache up to 12.

Strategy: Completing each indivicual building is largely based on your ability to liquidate the enemy agents and avoid their bullets. The KGB look-a-likes are able to fire from three different positions: Standing upright, a kneeling stance, and also by laying flat on the ground. When you're on the same level as an enemy, kneel down and fire. You'll hit them unless they lie down on their stomachs. Also, if they're standing when you fire, their bullets will pass over you. (Just stay crouched down.) If their bullets are fired from a lower position, wait until they bet near and jump, letting them pass under Otto.

At the onset of each round, jump in the elevator on the 30th floor and descend to the bottom of the building. As you drop, keep a close watch on the levels just appearing at the bottom of the screen. When a spy is below you, descend to the floor he is on. When the agent draws his gun, (his hand will appear in front) rise back up and let his bullet go beneath you. Then go down and fire at the enemy. You can accomplish this since the agents carry simple, one-shot pistols. If an agent is under a hanging light or near the elevator shaft, take advantage of this by shooting or jumping on the enemy for more points.



Remember to get off the elevator to retrieve any briefcases.

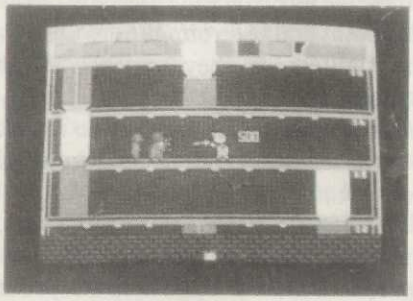
When you finally reach the bottom of the first shaft (the 19th floor) get out and immediately move to the left (unless a red door is at the right.) Go to the far left and get on the escalator. This is accomplished by standing on the blue boxes adjacent to the escalators and pulling down or up. Take the escalator to the 16th floor (17th floor if you are on the right side of the building) then run to the elevator in the center of the screen. Take this one to the 15th floor and get off on the darkened hallways.

Once you've gotten to the unlighted floors, move to the left and take the elevator to the 13th floor. (There will often be a red door down the hall of the 14th floor. If there is, retrieve it and get back on the elevator at the left.) Proceed from the left of the board to the right and get on this elevator. Take it to the 7th floor. (There will always be an attache located on the 10th, 9th, or 8th levels; So be sure to pick them up.)

After you make it to this point, you'll encounter a set of 5 elevators. This is the most difficult part of each building since the enemy cannot control these elevators. You must always wait for them to come to you. The main threat in this section of the screen comes from the positioning of the red doors. One will often be set on the left, while another will be placed at the right, requiring Otto to move across all 5 elevators. Keep an eye out for the enemy and their bullets when initiating these moves.

Remember that you can jump open elevator shafts, (be sure the elevator is well above you or you'll hit the bottom of it or the elevator cable.) Also, when you near the bottom and a red door is on the opposite side, go down to the basement floor and it will take Otto to the floor where a red door is located. Get the case and return to the basement to finish the board.

The differences in later buildings are subtle, but profound. At the start of subsequent levels more red doors will be located at high spots in the structure. The enemy agents are also faster at reloading, and they assume the lying down stance much more often.



Elevator Action is a good action game which allows for a great deal of player input. It will probably get lost in the glut of the laser games, however and, while not as elaborate, provides the player with the same amount of excitment. ▲

Long Shot Selections For Flipping Out

By Zelmo

It has taken years of debate with many of my peers in the coin-op industry, but I have finally come to the realization that there are untold numbers of individuals who have never played a pinball machine. Maybe I've always been too close to the situation to ever really believe this. However, recent events have proven this to be the case, especially with this generation of video-weaned players. More surprisingly to me was the fact that there is no age barrier to those who have never experienced the exhiliration of making a sequence of shots or hitting a 'special when lit' target.

The other day an old high school friend was visiting from Ohio and we had a chance to get together. My schedule included stopping by a local distributor to see some of the new games on display in their showroom, including the pinball machines I'm reviewing in this issue.

When Chuck and I were growing up we played basketball, bowled together, but never once did we share a game of pinball even though my father was in the business. This time around we were a captive audience and I was curious to see Chuck's reaction to the latest flipper games. I wanted to watch his reactions and discuss how he felt about different machines and the features each offered.

This was valuable to me because, as Chuck admitted, it was only the third or fourth time he had ever played pinball. Although just a beginner, he was able to make certain shots as I pointed out what the primary targets were, and truly seemed to enjoy the occasion. One reason probably had to do with the fact that he beat me a couple of times in the process, which also brings up an important point.

There have always been those people who have argued and criticized pinball on the basis that in no other game should a novice be able to beat an expert player. The rationale seems to constantly revolve around the assumption that pinball is more luck than skill, so why even bother to play. However, that luck factor, if you want to call it that, isn't really anything more than ten to fifteen per cent of any total game's play. And for my money, I've always seen its existence as being something of a strength, especially for players who are just starting out.

In fact, it's that unpredictability of a

ball's movement on a playfield, as it makes it way down to the flippers, that really separates pinball from any other form of coin-op entertainment. The reason is that this same occurrence of spontaneous movement on the board when a ball hits off a bumper or some other area, is also responsible for the freedom and personalization of any given player's approach to mastering the machine.

There's, admittedly, a sense of improvisation when devising a strategy to beat a pinball machine which is sorely lacking for the majority of video games or other arcade attractions. You can't just memorize a pattern of play with pinball but, rather, must be ready for almost anything from turn to turn. You have to be always alert to the ball's velocity and spin as it flies across the playfield, which makes pinball more interactive as an entertainment form.

The hope here is that once said this aspect of pinball doesn't turn you away from ever trying your hand at the game. Instead, maybe you'll be a bit more curious about these wonders which wait beneath a thin sheet of glass. And take comfort from the fact that you *can* control the action before you. It's take practice, but before too long almost anyone can be capable of *aiming* shots off the flippers to specific areas of the playfield. Once accomplished, it's not that long before you can isolate down to a single target or feature and hit it with regularity when the need arises. It's a learned experience, but one that's well worth the effort if you're into playing games where the challenge is purely a matter of your skills against those of a machine. And two of the current crop of pingames offer their own unique joys and disappointments as you'll soon discover.

FARFALLA

An extremely active producer of pinball machines, of late, this Italian manufacturer has enjoyed a good amount of success with models that are loaded from top to bottom and even feature double-level play action. Using their own unique elevated rail, the ball enters and drops down into a playfield area at the top right that offers three lanes and a small area along with corresponding letters (L-O-V-E). Spell out all the letters and the bonus multiplier value will increase up to 5X, 10X and, ultimately, 20X or a maximum potential of 400,000 points scored after the ball drains. In addition, any points built up in this manner can also be scored as part of a special bonus on the left side when the appropriate lights are lit.

Moving down on this narrow portion at the right, there are three thumper bumpers for some nice rebounding action, and an opening for access to a left area as well as another thumper bumper. Also here is a bank of four red drop targets, which begins the overall color keying of the other targets on the board. At mid-field, from right to left, there's a bank of three orange drop targets and a bank of four blue drop targets.

At the bottom, Zaccaria has added a new twist on the conventional lanes and flippers we ordinarily find on most

games. Called a 'react feature,' the creative minds behind Farfalla have incorporated an extra flipper on either side which can be used to save a potentially lost ball if a player's timing is accurate and the correct targets have been hit to activate this extra action.

Meanwhile, if that weren't already enough, there's still more to the game. At the left side a ramp leads up to a top playfield where you'll find two flippers, a deeply recessed target and a bank of six yellow drop targets. Now this isn't an automatic entry area since the ramp can sometimes be raised, resulting in well aimed ball traveling *under* and not *up* depending upon which targets have previously been hit. In addition, an element of time has been included whenever a ball does make it to the upper playfield. Normally, you have about twenty seconds of play before the top flippers go dead and the ball drains back down to the bottom board.

All in all Farfalla (which means butterfly in Italian) provides good build up in action and scoring from turn to turn, as well as the potential to add on time units for extra play once your regulation game is over. There are ample areas for making long shots from left to right flippers, and the ability to go right to right or left to left for some interesting, shorter range reverses.

The balance and positioning of the key features deliver a fast-paced exercise in flipper skill with more than enough scoring rewards for exceptional play. Admittedly, on the surface, Farfalla might seem to be slightly overwhelming, but Zaccaria hasn't forgotten the basics and helps novices along with color-coded targets and a full array of lights revealing what the next prime targets are at any given time. In the final analysis, here's a pinball machine that's well worth the price of admission with enough going for it to keep you coming back for more. See if you don't agree the next time you run across this eye-catching graphic creation from Italy.

"X's & O's"

Except for some original designs such as Speakeasy, Grand Slam and Gold Ball, Bally has enjoyed its recent conventional pinball success due to the strength of Eight Ball Deluxe as a limited edition release and the return of Centaur II, based on the 1981 model. This time we're presented with a tic-tac-toe theme and a playfield reminiscent of a number of the company's games from just a few short years ago. The question is whether this combination works.

Play begins with a skill shot off the plunger that might remind some of Mr. & Mrs. Pac-Man. The challenge here is to send the ball up high enough to a roll-over switch that offers 100,000 points, 200,000 points or a special right off the bat, before the ball exits directly onto the playfield. Pull back the plunger too hard and the ball will travel around the little loop at the top of its arch and roll down to a small flipper and an area that features a bank of three drop targets. Making these targets three times, if you can, will result in the potential of gaining a special on the next go around.

Move down and you'll find three thumper bumpers, while the left side features an outer lane offering the possibility of incremental scoring from 20,000 points up to 60,000 points and a special. There are also two shorter lanes just to the right where a special, extra ball and increased scoring can be depending upon how you're doing with the rest of the game.

As for the main portion of X's & O's, at mid-field, there are three banks of three stand-up targets, with one at the left, center and right. Besides their own individual point values, the targets also tie-in with an 'x' or 'o' light just in front of each bank which determines what you'll register on the big tic-tac-toe display sitting in the center. Finishing off the layout is a dual lane design on the left side, with the outer one curved to lead a ball down and over to the left flipper. At the right the conventional flipper and lane set up has been embellished with the inclusion of a kick-out hole at the bottom of the outer lane. Nudging the ball into this will gain not only some extended life and points, but also a kick up back to the right flipper and the opportunity to continue playing without losing stride.

However, as mentioned earlier, the entire rationale behind this Bally pin is to fill out that tic-tac-toe board by hitting the appropriate targets. At the start of play the game automatically pre-selects whether X's or O's will be the letter entered when a target is hit. Basically, the left target bank corresponds to the left vertical row of boxes, while the center and right side targets do likewise for their rows.

The spotting of an X or O can be changed, during play, if the ball travels down the return lanes to the lower flippers, or hits the rebounding rubber just above the flippers. Complete any vertical line with all X's or all O's and the targets for that bank will now be worth 5,000 points each time they're hit. Do the same thing horizontally or diagonally, with the same symbol, and the board cannot be changed from its X or O value.

Making three of a kind in the same line will also have its own reward with the scoring for this type of sequence increasing from 20,000 points up to a maximum of 380,000 points. In addition, if you can complete a card with any combination of X's & O's, you'll gain 90,000 points the first time around, 180,000 points for doing it again, 270,000 points on the third time and a special if you can fill it another time. Also, every time a card is completed, a letter in the words Tic-Tac-Toe, which appears on the backglass, will become lit until someone can finish this off and gain a special in the process.

With all of these mega-point totals and increased scoring possible on X's & O's you'd think that the play action might carry everything off for a satisfying challenge. In fact, there is a definite need for skilled and well-timed shot making off the flippers, but the game falls far short of the mark.

One immediate problem is that those targets on the left and right are so recessed that making them a high percentage of the time is virtually impossible. If anything, there's more luck involved here, with potential rebounds from slingshot kickers or misplaced shots, than there is skill. The top portion of the field, meanwhile, does provide the opportunity to place some long range shots off the flippers, but they aren't really tied into the gaining of an all important x or o. And once there the action is basically a question of getting a good rebound off the bumpers before the ball rolls back down.

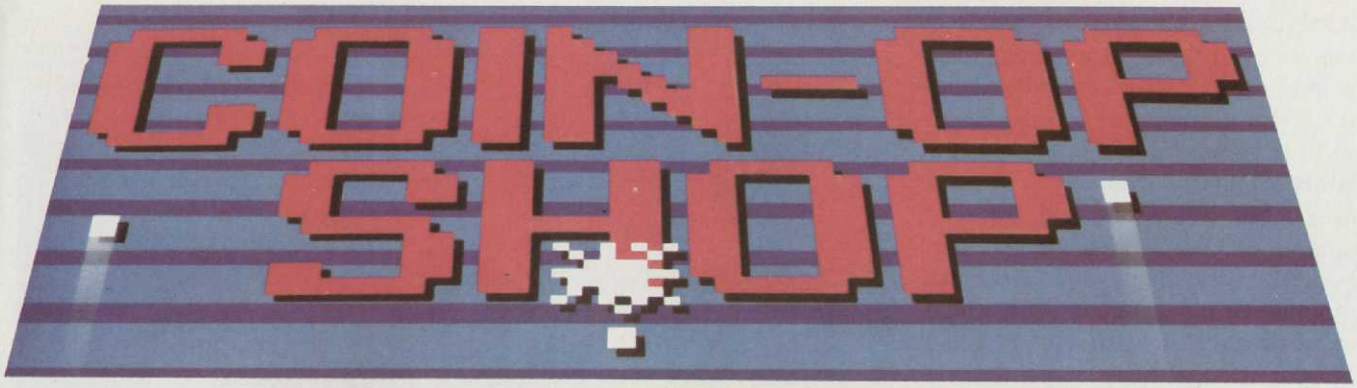
So you're really limited to the middle of the playfield and the hope that you can maximize any shots you can make, before having to rely on the fate of a rebounding ball. To say that your destiny rests in your ability to master the flippers, is truly an understatement and in this day and age players will need more of an incentive to return to X's & O's after they've played it a few times. Unfortunately, it's not worth the effort on a game where so much more could have been done to enhance the play and open up the board to a greater array of shots.

Extended Play

If you've followed the fortunes of pinball the past few months, you've noticed a slow, but steady, stream of games being introduced. Most have been designed to appeal to the novice player as well as those remaining flipper aces who never left this coin-op attraction. What we've seen has been a greater reliance on standard themes which are easy to understand, and game play that tries to take full advantage of the most basic playfield ingredients.

This trend doesn't appear to be losing any steam given the models we'll be seeing in the months ahead. Already finding its way to many game rooms around the country is Mylstar/Gottlieb's updated remake of a 1977 hit which is now being called Jacks to Open. Following along similar lines of what has long been a pinball staple—a playing card theme—is Bally's newest, Kings of Steel, which offers a full house of flipper excitement.

Having enjoyed considerable success with its Firepower II, Williams is already testing a fast-paced entry for spring that we'll have more on in an upcoming issue. And, rounding out the pinball action domestically, Game Plan is back in the picture thanks to the positive response to Sharpshooter II. Scheduled next is a totally original creation called Attila the Hun which promises to keep this company solidly in the race as pinball continues to comeback for one more shot at today's coin-op playing audience. So keep those flipper fingers poised because you 'ain't' seen nothing yet. ▲



Springing Into Action With The Latest Arcade Hits

By Jim Gorzelany

As an old song once proclaimed, "Everything old is new again." Many of the games featured in this month's Coin-Op Shop take the form of conversion kits that allow an operator to economically put an older game to a new use by switching components and adding new graphics. Others are rehashes or variants of existing coin-op games. Some are both.

Preceding the release of both Firefox and TX-1, Atari is offering Cloak & Dagger, a conversion kit of four successful Williams-manufactured games. From Sega/Bally-Midway comes Galaxy Ranger, a game that could easily have been called Astron Belt 2. Williams finally released Blaster this month, a too little-too late effort from the creators of Defender and Robotron. Taito introduces The Tin Star this month, a game that looks and plays much like the company's Wild Western, and also offers a Phoenix-like conversion-kit game, Exerion. Stern brings back the rifle target shooting game scenario with much fanfare in Great Guns, and shows us its version of a laser-disc football game called Goal-To-Go.

Two other companies on the coin-op scene also join in the action this month, SNK Electronics and Funai. SNK offers Marvin's Maze, a 3-D Pac-Man clone conversion kit, while Funai imports a flashy slide-and-shoot laser-disc game from Japan.

FUNAI'S INTERSTELLAR FANTASY

Funai makes its stateside video game debut with Interstellar Fantasy, an impressive laser-disc outer-space shoot-'em-up game. Previously, the Japanese game manufacturer had made inroads into the American market through licensed efforts only. Interstellar Fantasy marks its first independent American release.

In Interstellar Fantasy, you control a bottom-screen spaceship, the "Ferald Runner," and combat hordes of hostile aliens for points in each of an assortment of colorful worlds. As in most laser-disc games, all of the backgrounds are disc-based; Each planet is nicely represented by a combination of computer animation and special effects film footage. Your spaceship and all of the game's adversaries are generated by the machine's computer hardware. The Ferald Runner is armed with both rapid-fire lasers (controlled by either a joystick-mounted trigger or a console-mounted "Fazer" button) and bombs (dropped by pressing the console-mounted "Burn" button).

As the contest begins, you blast off from your home base and head for space (in an attractive computer-animated scene). You're then transported to your first alien world, where you fly over a hilly landscape that is blanketed with computer-generated contour lines. Immediately, squadrons of hostile spaceships appear in the distance on the horizon. The aliens will fly and swoop towards your ship in the foreground and attempt to crash into it kamikaze-style before they fly off of the bottom of the screen.

If an alien crashes into the Ferald Runner, you'll lose one of your three initial ships (bonus ships are earned at preset intervals). Points are scored, as you would imagine, by blasting the alien attackers with your lasers. Bonus points, meanwhile, may be earned by destroying four alien ships in rapid succession. This actually isn't very difficult (at least not in this first wave)—you can often wipe out an entire formation before they clear the horizon if you're quick enough on the trigger.

After clearing the skies of attackers, you'll be whisked to the second alien world featuring a dark, crystalline landscape that is brightened by intermittent vertical energy beams. Here, the battle becomes more involving as you're pitted against two different types of attackers: swarms of Galaxian-like fighters that swoop and dive at you, and formations of bomb-dropping flying saucers that cruise overhead. Since the saucers fly out of your effective firing range, the best you can do is avoid the bombs that they drop.

Later in the wave, clusters of land-mounted bases appear on the planet's surface and the overhead bombers take a well-earned rest. These bases can be destroyed by aligning them with a set of on-screen crosshairs and pressing the bomb-releasing "Burn" button (while, at the same time, continuing to do battle with the kamikaze fighters).

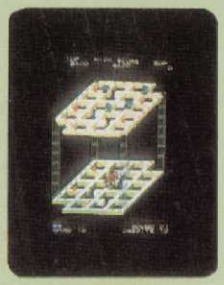
The third planet is an eerie world made up of hypnotically-swirling colorful nebulae. Here, the swarms of diving alien fighters and bomb-dropping saucers are joined on the screen by armies of land-based moving tanks. If you survive long enough, they are later joined by yet another enemy, the Delta UFO. The UFO is a large, triangular spaceship that swoops in from the distance to directly attack the Ferald Runner. This powerful craft can only be destroyed by landing eight direct hits in the notch located on the nose of the UFO.

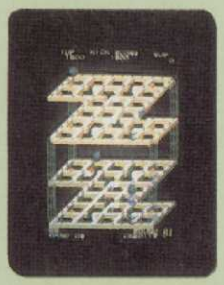
While Interstellar Fantasy is essentially nothing more than a bottom-screen slide-and-shoot contest having laser-disc backgrounds, both the game and the backgrounds are a bit better than the norm. Gamewise, I liked the fact that, in order to survive later waves of the action, you must be able to simultaneously: 1) bomb ground targets; 2) avoid bombs dropped by overhead spacecraft; and 3) fire upon and avoid crashing into aggressive alien fighters. Graphically, Funai has done a nice job in using both special-effects footage and computer-animation for the laser-disc backgrounds. While the computer animation is not nearly as detailed as it is in Williams' Star Rider, it's a nice touch nonetheless. The stereo music and sound effects are likewise well-done, especially the muffled heartbeat that accompanies the crystalline world, and the spacey electronic music that is generated while you're on the nebulae planet.

On the negative side, your spaceship is a bit on the large side and takes up too much room at the bottom of the screen, leaving you less of an area to work with on defense. Further, the game isn't always precise—your ship can be destroyed even when it appears that an attacking alien has just missed your craft. However, these are picky drawbacks that can easily be compensated for once you get the hang of the game. Also, while the disc-generated backgrounds are nice to look at, they're strictly window-dressing. There's no real interactivity with the laser-disc footage here.

Overal, Interstellar Fantasy is certainly a better game than was another bottom-shoot laser-disc game of this type, Data East's Bega's Battle. Hopefully we can expect to see more quality machines of this type from Funai in the near future.

SNK ELECTRONICS' MARVIN'S MAZE





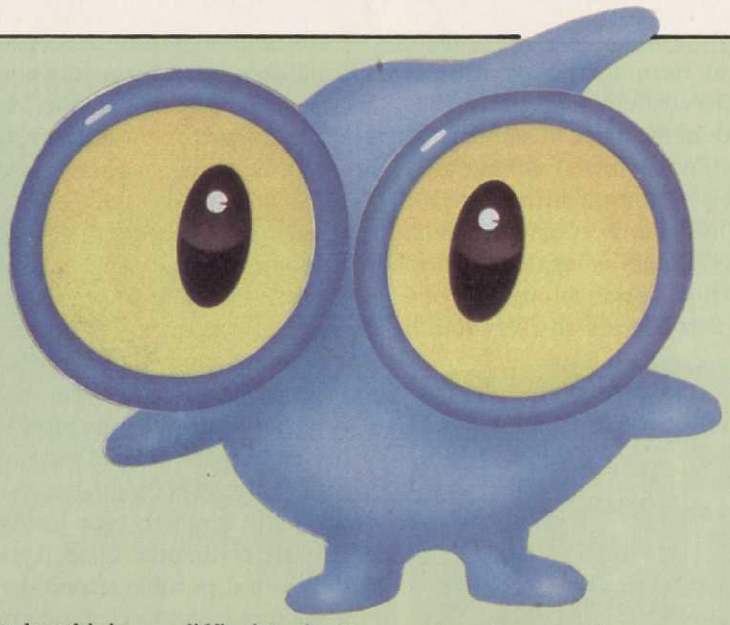
Another coin-op company hoping to find success with today's players is SNK Electronics. Their latest creation is a bi-level, three-dimensional Pac-Man/Crystal Castles variation entitled Marvin's Maze. The game is constructed as a conversion kit for a number of popular machines including Zaxxon.

You control the title character, a red,

bug-eyed creature, by means of a four-position joystick. Marvin is not an easy character to control. Since the maze is presented in a "3-D" perspective, all your joystick movements must be at 45-degree angles to what you see on the screen (north on the joystick corresponds to northeast on the screen). You are pursued by up to five blue Robonoids who whirl into the maze one at a time.

Each level of the maze consists of a brightly-colored grid, connected to the other level by an elevator tube at each corner. What makes the grids more mazelike are the gaps that appear in the grid tracks on both levels. The gaps may be crossed by Marvin, but only from the side of the gap that features an orange marker. Upon crossing a gap, the marker will switch to the other side of the opening. Scattered throughout the maze are 22 red dots (you earn points for passing over each of them) and eight pulsating power dots (four on each floor). By passing over a power dot, Marvin gets cross-eyed (in addition to already being bug-eyed), turns orange, and can take one shot at the Robonoids for points by means of a cabinet-mounted fire button. Unfortunately, Marvin can only fire his weapon in the direction he is headed, which can make it extremely difficult to blast a Robonoid who is on your tail in hot pursuit.

You can earn extra points by destroying two or more Robonoids with a single



bullet, but this is very difficult to do. Unfortunately, it is a necessity in Marvin's Maze. You will not be able to proceed to the next maze until you've killed 16 Robonoids (a counter at the bottom of the screen will indicate how many remain). Using simple math, this means that, given the eight power dots, you must shoot at least two Robonoids per chance. After shooting 16 Robonoids, you'll proceed to the next level of the game. In all honesty, I have no idea what the next level is. The machine I was playing broke down before I could get there.

The gameplay of Marvin's maze is stiff and the joystick control is imprecise. The sloppy controls become especially apparent when the Robonoids are in pursuit and you try to quickly make a turn at a sharp corner. The two-level maze is a nice idea, but you'll often find yourself being whisked up or down an elevator by just approaching a corner. Again, this is due to the sloppy controls. The graphics are adequate, but are not in themselves particularly remarkable or entertaining.

At least when Atari chose to release a 3-D maze game they spiffed it up with some excellent graphics and a few new twists for Crystal Castles. Marvin's maze is not only frustrating to play, but its the same old game in a slightly new package that has been delivered two years too late. Pac-Man clones are a lot like Elvis impersonators—no matter how adequate the performance, one always leaves you longing for the original.

ATARI'S CLOAK & DAGGER

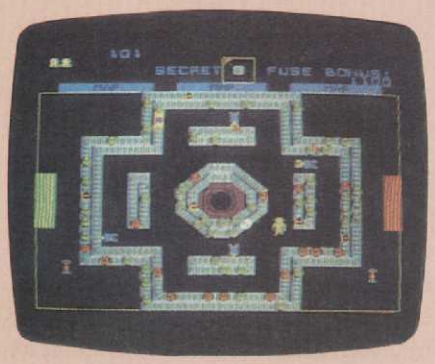
Atari seems to be finding new coin-op life these days in marketing impressive conversion kits for existing machines. Following on the heels of its Black Widow (a conversion kit for Gravitar), and Pole Position II, Atari releases a new kit that you're likely to see in gamerooms everywhere. Because it's such a great game? Well, it's not a bad one, but the real reason is that Atari has wisely chosen to develop its newest conversion game as an upgrade for some of the most popular videos ever to hit, and currently clutter, the dark corners of the arcades: Defender, Stargate, Robotron, and Joust.

The game is Cloak & Dagger, and the only thing it shares with the aforementioned models is the cabinet and basic hardware systems. In the game, you control the destiny of "Agent X," a paunchy, mustachoioed secret agent, appropriately attired in a regulation spy trench coat. Agent X must save the world by recovering a set of stolen plans and destroying the evil Dr. Boom's 30-level subterranean munitions laboratory.

At the onset of the contest, a cartoon graphic depicts agent X chasing Dr. Boom into his underground lair. Agent X then enters an elevator and descends to the first laboratory level. Each level in the laboratory is given an overhead perspective and features an increasingly difficult-to-maneuver-through configuration of game elements and obstacles. A series of moving conveyor belts containing armed bombs, unarmed bombs, and special bonus boxes appear in each level, along with two or more armed guards and any number of other enemies, such as the hideous laser-firing giant eyeballs that appear deep in Dr. Boom's lair.

Agent X is controlled by means of two joysticks. The left joystick controls his movement, while the right joystick controls his gun fire, as in Robotron (his gun, for some mysterious reason fires arrows instead of bullets). Upon entering a level from one of the elevator doors located at the left and right sides of the screen, agent X must walk over unarmed bombs and destroy armed bombs by

shooting at them for points. Guards and/or other creatures must similarly be killed, both in the name of self-defense and higher point totals. Occasionally bonus boxes will appear on the conveyor belts. By walking over an "S" box, Agent X will obtain a map that will help him safely find his way through 1/3 of a minefield that appears on every fourth



level (quicker minds will figure that nabbing three "S" boxes will net you the entire map). Appearing less frequently are "X" boxes. Walking over one and our hero earns an extra life.

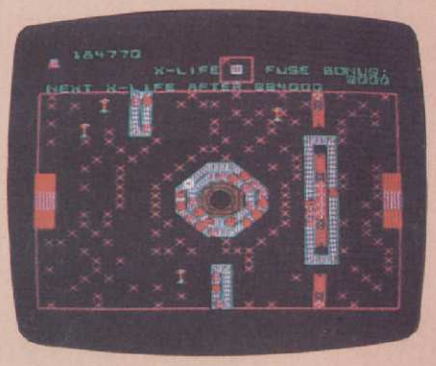
At the center of each level is a large bomb with a long, curled fuse. The fuse can be lit, and the bomb detonated, by maneuvering agent X near the bomb and pressing the "Igniter" button. Warning signals sound the alert, and you'll have only a few seconds to exit the level before it is blown to video kingdom come. A series of arrows will point the way to the proper elevator when this happens. If you escape unscathed, you'll earn bonus points. However, whether or not you light the fuse, you must be wary of the center-screen bomb. If you accidentally hit it with your gunfire, it will explode immediately without warning. Also, if you take too much time in a level, the fuse will light by itself (sparks from your shoes, no doubt), again giving you but a few seconds to escape the room.

You'll lose one of your three initial lives by either being shot or otherwise attacked by a guard or other enemy, running over a live bomb, or getting caught in the level when it blows up.

After escaping one room, it's back to the cartoon graphic of Agent X in the elevator. These elevator scenes are always a treat—Agent X will shamelessly "mug" one of a number of appropriate expressions based upon your performance in the room he just escaped from. For example, if you did well and escaped in plenty of time before the explosion, Agent X will cavalierly snap his fingers and whistle; on the other hand, if you exited at the last possible second, he will wipe the soot from the explosion off of his face. By holding down on both joysticks during this scene, you can make the elevator skip as many as three floors at a time if you choose, in order to quickly progress to advanced levels of play.

If you get through to and destroy the 30th. level, you'll ride the elevator back up to the surface to battle Dr. Boom once again; if the arcade operator has set the machine to do so, you'll be awarded a free game.

Cloak & Dagger is a challenging, unusual contest. The graphics are sharp and well-detailed, and resemble in a way the look of the successful home-computer game, Shamus. The game play is reminiscent of the reactor maze levels of another recent Atari game, Major Havoc. Cloak & Dagger, however, is a more subtle game than most. While it does involve shooting, it's not specifically a shoot-'em-up game. The guards that



appear in each level can usually be eliminated without much trouble. The only other shooting involves detonating the small conveyor belt bombs for points. As the game progresses, each level presents a new type of challenge (strange creatures, caves that you must blast your way through, hidden mines, and so on), so the game rarely becomes boring.

Cloak & Dagger is being released as a tie-in with a Universal film of the same name starring Dabney Coleman. However, regardless of the success or failure of the motion picture, there are massive numbers of Defender, Joust, Robotron, and Stargate machines out there just waiting to be recycled. So Atari should do well with this game. While I cannot unconditionally recommend Cloak & Dagger to the masses (players with an insatiable thirst for immediate and continuous action may not appreciate it), it is worth plunking a few quarters into, which is a small price to pay to save the world.

BALLY/MIDWAY'S TAPPER

It has become common practice for video game manufacturers to create machines based on either licensed cartoon characters, films, TV shows, and sports (witness games such as Popeye, Tron, Star Trek, and NFL Football.) Recently, Bally/Midway even released Journey, which was loosely based on Data Age's dismal Atari 2600 home cartridge. However, with Tapper, Bally becomes the first videogame manufacturer to actually develop a machine based solely on the consumption of a licensed commercial product: Budweiser beer.

Ordinarily, it would be easy to draft a cynical review of such a commercialistic venture (nip it in the Bud, so to speak). Fortunately, Bally has created something more than just an ordinary game here. Tapper is one of the most amusing and engaging machines to come out of the current "beer-drinking" genre of video games. (This includes the recent Ice Cold Beer.) These games, by the very nature of their themes, are destined for popularity in saloons and on college

campuses everywhere. Unfortunately, this means that it will probably be difficult to find Tapper in many image-conscious neighborhood or mall gamerooms.

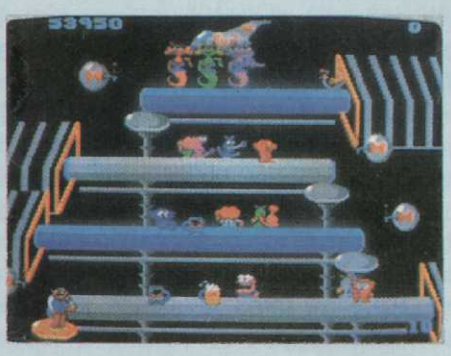
Nevertheless, if you are old enough to belly up to the bar, you'll find yourself in control of a spritely, old 1890's bartender, complete with parted hair and handlebar moustache. The object in Tapper is to pour and serve cold mugs of Bud for points to the patrons who line-up along four onscreen bars of varying length. You control your bartender by means of a joystick—tapping up or down will make him jump from bar-to-bar; moving it left or right will allow him to pick up tips for extra points. Beers are drawn and slid down the length of the bar by means of a switch controller constructed from a beer tapper handle (guess which kind of beer).

There are a number of different types of patrons in the tavern, each worth a specified point value when served. After a patron finishes off a cold one, he or she will send the beer mug sliding down the bar, back at the bartender. The bartender must then return to the edge of that bar and catch the empty mug before it crashes. The customers in this joint are vicious, too. If you neglect a customer for a second, he or she will pound on the bar and advance toward the other side. If a customer thus reaches the bartender's end of the room, the thirsty patron will angrily pick up the bartender and fling him the length of the tavern.

You'll lose one of your three initial lives if you either: 1) serve a beer where there is no patron to receive it; 2) serve a beer to a patron who is already drinking; 3) fail to catch a returning glass; or 4) get flung the length of the tavern by an unserved patron. Bonus bartenders are earned by reaching certain point plateaus.

After successfully serving all of the patrons in a given screen, you'll proceed to another tavern having increased the numbers of even-thirstier patrons. After every second screen you're entitled to a sudsy version of Russian roulette. Eight cans of Bud will appear on a bar. A suspicious-looking character will quickly shake all of the cans except one, then shuffle their arrangement on the bar. You must select the unshook can. If you pop the right one, you'll earn bonus points and that Bud will be for you; pick any of the other cans and you'll get a beer shampoo.

Everything about this game is (as they say in the brewing biz) of export quality. The graphics are funny and are cartoon-quaint without being cutesy. The animation is amusing, and the soundtrack is entertaining (though the "This Bud's for You!" theme can wear thin after a while). There's even a handy brass footrail mounted at the bottom of the cabinet. Best of all, the game is both accessible and challenging, even after repeated plays (or repeated beers, as the case may be). Besides, after seeing so many products based on video games created it's refreshing to see it work the other way for a change.



TAITO'S THE TIN STAR

The Tin Star is Taito's latest entry in its series of cute/action games that include Wild Western, Jungle Hunt, and Frontline. While it is not officially a sequel to either of these games, arcade aficionadoes will immediately spot a strong resemblence between them, both in terms of gameplay and graphics.

Here, you control the heroics of a small, cartoony sheriff, armed with a single pistol, who must battle it out with a series of equally-cartoony bandits for

points. The sheriff's movement across the screen is controlled by an eight-position joystick. The sheriff's gun is aimed by turning a knob that clicks into each of eight directions; pushing down on the knob will fire the weapon (only two bullets can appear on the screen at a time). A console-mounted jump button allows the sheriff to leap over rolling barrels, jump atop tables, and so forth, depending on the screen being played.

In the first screen, your sheriff rides into town and dismounts his trusty steed in front of a saloon and adjoining building. Bandits will appear periodically in windows and atop the buildings, and will fire upon you. Occasionally, a bandit will exit from the front door of the saloon and attempt to shoot it out with you in the street. The object here is simple: kill all the bandits without getting yourself killed first. From time to time, a barrel will roll from one side of the screen to the other. You can either avoid it or leap over it by using the jump button. If you're either hit by any of the bandits' gunfire or run over by the barrel, you'll lose one of your three lives.

Kill all the bandits in the street scene, and your sheriff mosies into the saloon where he once again meets up with a group of desperate desperadoes. This time the sheriff is located in the middle of the room and is fired-upon by bandits on three sides. Periodically, bandits will pop up from behind the bar, behind a player piano, and in the saloon windows. Bonus points can be earned by killing bandits while the sheriff is atop the table in the middle of the room (you use the jump button to get there).

In the third screen, you face a gunfight out in the (not so O.K.) corral, where you can climb a ladder and jump on the bandits for extra points. If you make it this far, you'll participate in a bonus scene where your sheriff rides horseback and blasts bandits.

Overall, I didn't find The Tin Star to be particularly exciting or amusing. Your sheriff moves at a frustratingly slow pace across the screen, which can be deadly when trying to avoid the bandits' bullets. The click-wheel fire control slows the pace even further. A second joystick to control firing (as in Robotron, et. al.) would have worked better, enabling the player to react quicker to the bandits' actions. Graphically, The Tin Star is blocky and a bit boring.

While fans of Taito's Wild Western and Frontline may find The Tin Star to their liking, I didn't. Frankly, I found this tin star to be slightly tarnished.

TAITO'S EXERION

Taito is generally credited with creating for Bally/Midway, the first "superstar" video game, Space Invaders. Since then, the Japanese manufacturer has established its own American operation, Taito America, and has secured its identity in the marketplace by developing innovative games such as Qix, Jungle King/Hunt, and Elevator Action. It's a bit surprising, then, to find Exerion, a new Taito America release that is decidedly unoriginal, both in concept and creation (it was licensed from another Japanese company, Jaleco).

Exerion is essentially a rehash of Centuri's 1981 hit, Phoenix. In it, you control a bottom-shoot spaceship having full-screen mobility by means of an eight-position joystick. The object here is both basic and all-too-familiar: blast away at endless flocks of insane killer birds that swoop down and fire upon you for points. At your disposal are two weapons systems, each controlled by a single fire button: 1) a dual fire system that allows you to fire a short, double burst of lasers up toward the top of the screen, one blast at a time; and 2) a rapid-fire system that allows you to send a continuous salvo of single-stream laser blasts up at your enemies. While your firepower in dual fire mode is unlimited, your rapid-fire system can easily be depleted with heavy use. A "charge" indicator at the bottom of the screen ticks down for each second you hold down the rapid-fire button; this feature can be recharged by one unit each time you hit an enemy bird in the dual-fire mode.

There are six different species of space foul that attack you in Exerion. Each looks and behaves a bit differently from the other. For example, the first birds you'll encounter look like fat bow-ties and attack you in long, single-file formations. The toughest enemies are the guided-missile-dropping "mother" birds that require eight direct hits to be destroyed. Other of the unnamed enemies include birds that split into two when hit and drop what look like dangerous dumbbells at you, and creatures that leave behind a momentarily-toxic cloud of dead-bird gas when killed.

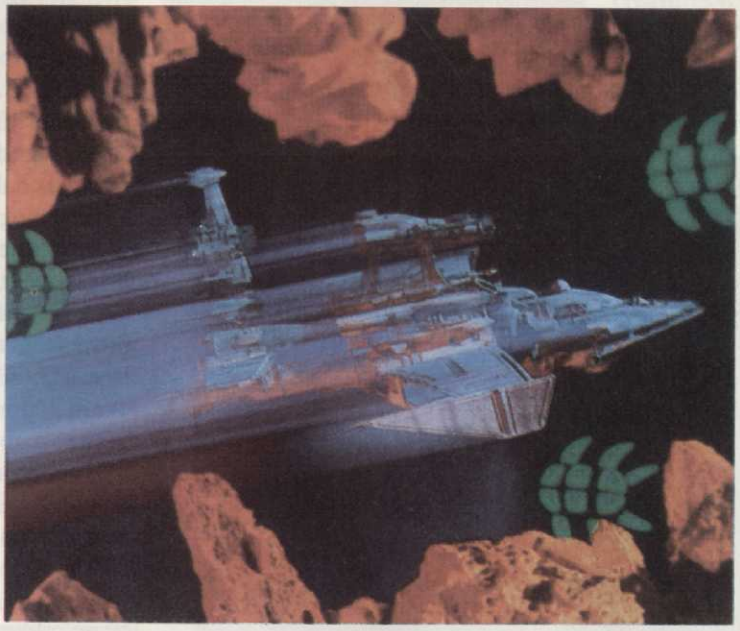
Saving Exerion from being a total Phoenix clone are a few handy variations on the basic theme. I especially liked the fact that your spaceship can travel anywhere on the screen to attack or avoid the birds (disappointingly, though, you can only fire your lasers straight up toward the top of the screen). Also, the action takes place over a richly-detailed perspective-scrolling landscape. You'll fly over strange intergalactic mountains, valleys, deserts, pyramids, and even an outer-space version of Stonehenge. Though the backgrounds are there only for effect, the visual element adds a nice touch.

Exerion is a relatively exciting, colorful fly-and-shoot contest that is limited only by its own lack of originality. If you're either new to the arcades or want to rehone your Phoenix bird-blasting skills, you'll certainly want to pump some silver into Exerion. Otherwise, you might want to just give this game the bird.

SOFT SPOT

Video Gaming The Second Time Around

By Dan Persons, Ted Salamone and Mike Sittnick



Time and technology wait for no man. It was with that thought that I began saving up my pennies in the hopes of upgrading my game setup for an Atari 2600 to a third generation game system. I was debating between an Atari 5200, a ColecoVision and a Vectrex when I got a call from a close friend and fellow gamer.

"Hi, Mike. How ya doin'?" I asked.

"Harrumph," said Mike (or words to that effect).

"What's the problem?"

"Do you remember how much I just paid for my brand new ColecoVision?"

"About $120, right?"

"Well, I'm looking at a newspaper ad for a store that's selling factory reconditioned ColecoVisions for $90."

"Uhh. . . What did you say the name of that store was?"

The store turned out to be a place that normally sells kitchen items. Since it was about ten minutes from my apartment, I rushed uptown to check the deal out.

It looked legitimate enough. The unit was in a standard ColecoVision box except that printed over the illustration was a large yellow swath that read "*Reconditioned.*" Since the word was printed on, rather than being a sticker or a rubber stamp, it appeared to be all on the up-and-up; this *was* a unit that Coleco had reconditioned at their factory. However, this being a kitchen store, there was no way to check the unit out. At that point, I didn't care. I plunked my money down and carried my ColecoVision home.

Once inside my apartment, I wasted no time in setting up the system. With all the wires hooked up, the Donkey Kong cartridge in place and my TV turned on, I flipped the power switch. Nothing. I turned the unit off and back on again. Still nothing. Reaching in back of the console, I jiggled the plug that connects the power unit to the system. The ColecoVision title page appears on the screen. Aha, the power plug wasn't positioned correctly! I adjust the unit so that it's more firmly seated on the table, and the screen goes black again.

Having somehow lost most of my enthusiasm by this point, I get the unit running again and start playing Donkey Kong. Things go well for the first couple of games. Then in the midst of the second game, *Blink.* Suddenly I'm looking at two Donkey Kongs, one on the left side of the screen, one on the right. What's more, anytime Mario or a barrel are on the right side, their "ghost images" show up on the left. If this is a reconditioned console, it wasn't reconditioned enough. I look at my receipt. It's stamped "*No Refunds.*" I'm stuck.

Fortunately, since this is a factory reconditioned unit, it's covered by the standard Coleco ninety day warranty. Calling the Coleco hotline, I discover that the nearest factory authorized service center is a short subway ride away. The people at the center couldn't be friendlier or more cooperative. One week later, I'm in possession of a fully operational ColecoVision, at the added expense of a mere three dollars for two round-trip subway fares.

The moral: It is possible to save yourself a substantial amount of money by buying a reconditioned ColecoVision. But before you shell out your money, A) see if you can check out the unit on a TV set; B) find out what the store's return policy is; C) contact Coleco and find out whether there is a factory authorized service center within a convenient distance from your home. Otherwise, should something go wrong,

the cost of shipping the unit back to the Coleco factory could easily eat up a good amount of your savings.

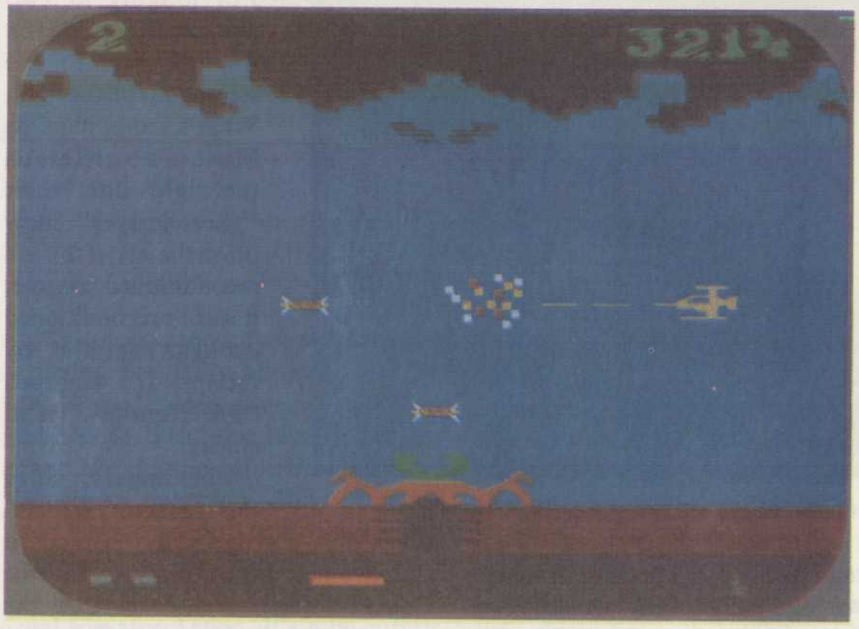
Okay, enough Consumer Watchdog for now. We've got some choice carts to look over, so let's take a look at them.

—Dan Persons

SUBTERRANEA

(Imagic/2600)

Strap yourself in, **Subterranea** for the Atari 2600 is going to be a rough flight. This one or two player game starts you out in the cavern of the evil Hexuplex. In this non-scrolling screen, you must maneuver your ship up, down, left and right with your joystick. These movements are shadowed at the bottom of the screen by the Hexuplex, a vile creature



with both the look and the demeanor of a crab. At regular intervals, the Hexuplex spits out Aerobots, saucer shaped devices that attempt to collide with your ship. To survive you must activate your rapid fire lasers to destroy the Aerobots by pressing your action button.

When all the Aerobots for that level have been destroyed, indicated by a shrinking line at the bottom of the screen, the Hexuplex skitters off, leaving behind a gleaming gem. Swoop down to touch it and a shaft opens up to lead you down to the nether reaches of the planet. Here's where the action really starts. Each scrolling tunnel is stocked with a different type of adversary: Nasty bats, chomping jaws, flying saucers, all of them determined to do you in. You must pursue all of these creatures and destroy them in order to proceed to the next tunnel. Collision with a creature, or with the skulls embedded in the tunnels' ceilings and floors will lose you a life, while coming into contact with any other area of a tunnel's ceiling or floor will cost you points.

Zap all the creatures in a tunnel and an opening that leads to the next tunnel appears at the bottom of the screen. Each exit is guarded by one or more Electro-Gates, electronic barriers that cycle through a series of rhythmic pulses. Making it through the gates requires the ability to recognize the openings in the pattern, and the timing to take advantage of the opportunity. It also requires you to think fast, since every pulse of the gate deducts one point from your score. If you can't make it past the gate in three attempts, you are forced to repeat the same tunnel without scoring any points.

When you've wiped out the creatures in the bottom-most tunnel, a glowing transit port appears. Fly through this port and you are advanced to the next skill level, which can feature, among other things, tunnel creatures that fire back at you and more complex pulsing patterns for the Electro-Gates. You start out with four lives and are awarded a bonus life for each tunnel that you complete without being hit.

I won't mince words, this is one fine shoot'em-up. Imagic has, by this time, perfected the illusion of momentum, so your ship responds to your commands as if it actually had mass, fighting against inertia when you power your engines, and coasting to a stop when you release your stick. Adding to the illusion is that the tunnels, in addition to scrolling smoothly horizontally, also scroll slightly vertically in response to the up/down movements of the ship, creating a realistic cinematic feel, as if a camera was trying to follow every movement of your ship.

Designer Mark Klein has followed the Demon Attack tradition in programming in a staggering variety of adversaries, each of which varies in speed or numbers, or the ability to defend itself. But nothing can prepare you for the first tunnel of the second level. Imagine sitting there, waiting to be attacked by some unspeakable horror, and instead being set upon by swarms of bluebirds, all of them firing missiles at you! The sight is so off-the-wall that, the first time it happened, I lost a couple of lives before I could convince myself that what I was seeing was real.

At a time when it seems like the old Defender-style streak-and-shoot has been run into the ground, Subterrenea proves that there's still life in that genre. If you should manage to stumble upon one at your nearby dealer, don't hesitate to snap it up. With Imagic carts now going for between five and ten dollars, you definitely will be getting more than your money's worth.

—D.P.

Not only is Imagic continuing to make home cartridges months after their announced stoppage of game manufacturing; the company is continuing to support the Atari 2600 as well, despite the glut of games for the machine. The newest game, **Subterranea**, is actually two simple games in one. The first pits the player's large but mobile spacecraft against a floor mounted "shooter." The shooter slides back and forth firing projectiles that are large enough to shoot. The player's main concern, however, is to avoid them and their tricky movements until he can get a shot at them. This part of the game is, in fact, very much like an inverse Galaxian. This time the computer is doing most of the shooting.

The player, unlike the Galaxians, cannot attack the sliding shooter. He can go on to the next screen after avoiding and destroying the right number of missiles.

Upon doing that task, a prize appears on the floor of the screen. Grabbing the prize causes the ground to open up. The rocket that the player controls goes into the opening to the second "game," which is equally simple. The game is a Defender-type scrolling shootout where the player must avoid the objects flying in horizontal lanes across the screen while avoiding the ceiling and floor of the screen, which costs points. If the player touches a skull, is hit by a flying object, or by its bullets (in later rounds), he loses a life. On some screens a player must pass through a number of force fields that flicker on an off without hitting them. If he fails three times in a row, the tunnel to the next cave closes and the player must play the screen again.

Subterranea as a game is reminiscent of both Defender and Asteroids, two shooting games that require measured amounts of both offense and defense. The blasting of the ship is super rapid, and the enemies get very nasty in the later screens; they shoot on sight as fast as the player can shoot at them, making for good opposition. Eventually, there are so many forcefields blocking the exit, only careful timing will allow escape. Unlike Defender and Asteroids, however, the player generally only has to concentrate on one danger at a time. The different challenges in the game are not very closely tied together either. Not only is there a lack of continuity, but there is also a feeling of deja vu-a game that has existed before and will be reincarnated again—one might think.

Unlike other Imagic games, graphics do not save Subterranea. They are slightly below average.The deadly skulls are nicely animated, though barely distinguishable. Other symbols and prizes are totally incoherent. Although the play action of the game, which is very true and precise makes up for its shortcomings for the first few games, the active life of the cart will not be very long. Shooting fans might find this game worthwhile if it is marked down to $7.99 or less. Subterranea is in many ways like its companions on the cheap shelf: All are games that would have been hits a year ago. Today's games demand more complicated game play than Subterranea supplies. Multiple themes with no real connections coupled with the disgustingly straightforward play make Subterranea a disappointment.

—*M.S.*

MEGAMANIA

(Activision/5200)

And I thought I had a weird sense of humor! After checking out Activision's **Megamania** for the Atari 5200, I know I'm not alone. Luckily for gamers everywhere, this uniqueness translates into a very nice slide and shoot cart.

The graphics are crisp and colorful with some delightful detail. The dice look realistic enough to use in a crap-

shoot, and the diamonds could even weaken the DeBeers monopoly.

Though the action starts out at a rather slow pace, it picks up quickly enough. It's not that the speed of the hostiles increases relentlessly, but that their movement patterns shift and twist in nightmarish fashion. Couple this with the slow directional reaction time of the horizontally based spacecraft, and players will find evasion or aiming a chancy affair at best. Picking off the enemy forces does get easier once a few sections of the attack wave have been devastated.

Just to keep the heat on, there's a fuel bar for a tank that's got to be part sieve. Only through completion of a round will the energy supply be topped off. In addition, any remaining fuel at round-end is converted to points and added to the score. For every 10,000 points, a bonus ship is awarded. These come in mighty handy for novice nightmare blasters!

Every hit registers with a solid sound reminiscent of the noises from a shooting gallery going full tilt, and destruction of the player's vessel is accompanied by an audio treat which perfectly matches the on-screen vaporization.

Megamania provides a challenging twist, is very well executed, and most importantly is a joy to play.

—*T.S.*

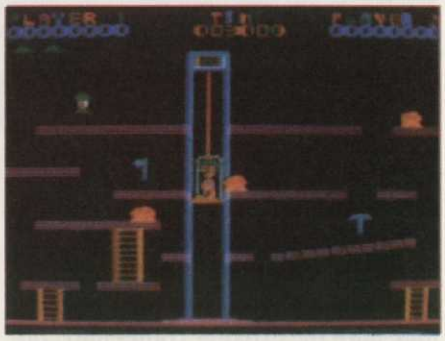
MINER 2049ER

(Big Five Software/5200)

Miner 2049er is coming out in 15 different formats, mostly from newer and smaller companies. And Big Five Software falls in both of these categories. The Atari 5200 version (which is identical to the Atari 400/800 version) is the best one available. This is truly an outstanding game worth the price of purchase. Even those with a large game library will find themselves playing Miner every day. The game has ten different screens, and is the ultimate climbing game.

In the game, the player controls Bounty Bob, who is searching through all of Nuclear Ned's abandoned mines for the treacherous Yukon Yohan. Bob must claim each section of each mine by running over it. There are radioactive creatures to avoid, but Bob's most difficult task is the precision jumping necessary to claim the entire mine before the timer runs out.

The beauty of the game is that each of the ten screens has been carefully thought out. On some screens there is only one way to complete the screen, and it may take dozens of plays to figure out the proper way, unless the player pauses and carefully studies a screen before playing it. Even then, the correct path is not always obvious. Some critical jumps are only one pixel out of reach. The game play is never boring because proper



timing of jumps is still very challenging even when the correct route is figured out. If that isn't enough, there are ten different skill levels. The highest level is absolutely inhuman!

Most of the screens have special features. Slides, Star Trek-like transporters, moving platforms, a moveable hoist, and a cannon are only some of the surprises in this multi-faceted game. Although the graphics of Bob and the radioactive creatures are nothing to write home about, the prizes that Bob must grab to vanquish the creatures are beautifully rendered. The prizes range from axes, to dynamite and martinis and everything in between. The special ef-

fects are also excellent. If Bob becomes contaminated he is fried into a radioactive pancake.

This game has it all. Tireless, entertaining, consistent game play; above average graphics and sound effects; an original reworking of an established theme; and a darn good sense of humor. Even the awful 5200 controller works reasonably well in this game. Miner 2049er for the Atari 5200 gets the highest recommendation. Without doubt this game is in a class above other great climbing contests like Donkey Kong and Space Panic.

—M.S.

CONGO BONGO

(Sega/2600)

You'd think manufacturers would know when to leave well enough alone. You'd think they'd know that there are some games that just won't work on the Atari 2600. But they try, anyway. Coleco found out with Zaxxon, Parker Brothers found out with Q*Bert. Now it's Sega's turn, with their less-than-satisfactory version of **Congo Bongo**.

This one player adaptation features two of the arcade versions' four screens. The opening screen, Jungle Mountain, requires you to use your joystick to guide your explorer up the ledges of a three-dimensional mountain while dodging the coconuts that Bongo, an exceedingly unfriendly gorilla, is rolling down from the top ledge. Left, right, up and down on the stick moves your man in those directions, although on the 3-D mountain, up and down actually resembles diagonal movements. To climb a ledge, you need only hold the stick until the explorer comes into contact with the ledge and pulls himself up to the next level. About halfway up the mountain, you must make a detour across a bridge, over a chasm (leaping it by simultaneously moving the joystick and pressing the action button), and through Monkey Plateau, where hostile simeons attempt to throw you into a raging river by climbing onto your back and overpowering you. The only way to save yourself in such a case is to shake them off your back by repeatedly jumping up and down.

Jump from the plateau to the opposite shore of the river, dodge a few more coconuts, climb a couple of ledges to reach the top, and Bongo will lead you to the next screen, The Great River. Here you must maneuver your explorer off the river's edge at screen bottom, onto a floating lilypad, transfer to the back of a benign hippo, leap to a small island, and then onto the backs of a couple of giant fish. From there it's just a leap onto the opposite shore and, avoiding a line of charging rhinos, a walk up to the level

where Bongo waits. You are then awarded with an intermission where the explorer gives Bongo a hotfoot and the game then resumes at the next difficulty level.

Your explorer can survive a fall off of some ledges, such as from the Monkey Plateau onto the next lowest level, but normally a fall from too great a height, as well as taking a dunk in the drink, will cost you a life. There's also a bonus timer that will lose you a life should you fail to make it to your goal before it runs out.

The people who are going to be most disappointed with this adaptation are those who are hooked on the arcade game. While Sega has tried to capture the detailed Zaxxon-like look of the original, the effect doesn't work on the low-res 2600. Although there are such nice details as an animated shimmer to the river, the "mountain" looks more like a mammoth stairway, and the monkies flicker to beat the band. In fact, if the Jungle Mountain screen is at best a failed attempt at capturing the skewed point-of-view of the arcade game, the designers at Sega appear to have thrown in the towel with the Great River screen. Here, they've completely dropped the 3-D bit, and settled instead for the standard overhead view, thus losing one of the game's biggest selling points and turning this board into an oversized Frogger.

Those who have never laid hands upon the original may at first find this version, with its altered perspective and its need for precision timing, challenging. Unfortunately, the folks at Sega do not accelerate difficulty levels at a pace that would satisfy many gamers. Things do speed up past the first level, but not to the degree that would keep the game challenging over repeated plays. And since the only game variation available is the ability to speed up the movement of your explorer, if you've gone through one skill level, you've pretty much gone through them all.

Congo Bongo did not have a very long life in the arcades. That, in itself, doesn't mean anything, since many superb games, such as Reactor, have bombed in the game rooms. But I doubt that this version for the 2600 will extend the game's lifespan any. It's a fair attempt, but I don't think it was really worth the effort.

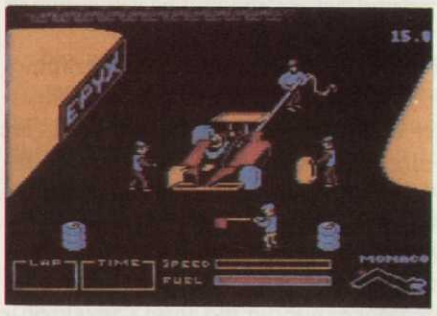
—D.P.

PITSTOP

(Epyx/ColecoVision)

Fear not, driving module owners, Epyx is filling the demand for a new driving game with **Pitstop**. The hit game for Atari computers is every bit as good as ColecoVision, and it can be played with a standard ColecoVision joystick for driving fans who don't have an extra $60 for a steering wheel.

In many ways, Pitstop is like Turbo, minus the pretty scenery and changing road conditions. What Pitstop lacks in background scenery it makes up in strategy and detail. Unlike most racing



games, the car does not "crash" and then mystically reappear on the road (How they repair the exploding car in Pole Position is beyond me!). What bumping into other cars and the side of the track does do, however, is wear down the tires. As the tires get hot they change color. Once per lap, drivers have a chance to enter the pitstop to change tires and refuel. Meanwhile, cars are passing, and time is ticking. Anywhere from one to four players compete and the winner is determined by the player

who has won the most money over a series of races. Players can choose between six different race tracks, and can choose to race three, six, or nine laps over one or more heats at three different skill settings. There are 108 different combinations of options, as many as any ColecoVision game, and more than most. Pitstop is also only the second four player game available for ColecoVision. The game also includes an onscreen radar to show the player where the next pitstop is. Pitstop is not only a game with detail and some strategy, but it is very entertaining graphically. The "pitstop" screen features fully detailed animated figures who get the car in shape, even a guy to wave the yellow flag to get the driver back on the track. The actual road and cars are larger and more realistic than ColecoVision's Turbo, and it is much harder to avoid contact. Epyx obviously put a lot of thought into this cartridge. Turbo was such a big hit but Coleco did not make a joystick version of it. Pitstop is an excellent driving game either way. Its graphics are above average, the amount of variety is phenomenal for a race game, and its got touches of strategy and the challenge of outracing friends on the built in timer. Unless AtariSoft decides to release Pole Position for the ColecoVision and driving module, players can settle for Pitstop. It's better than Turbo, and definitely different. Pitstop gets an extremely high recommendation.

—M.S.

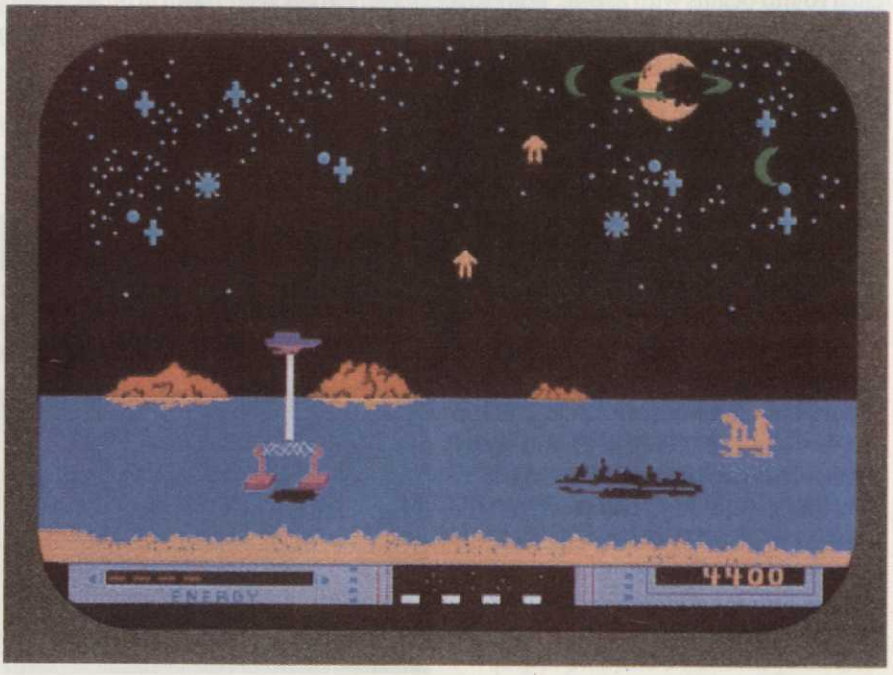
NOVA BLAST

(Imagic/ColecoVision)

I've been sitting here for a while, trying to figure out how to say this. **Nova Blast**, Imagic's first (and probably last) original entry for the ColecoVision game console holds up the Imagic tradition of quality, with good graphics and unique enemies.

Sort of a "Defender Meets Missile Command" this one player game casts you as the pilot of the Nova 1, a spaceship on patrol over the horizontally scrolling surface of an unnamed water world. It's your mission to protect the four evenly spaced island cities from the attacks of an aggressive enemy, who appears as both airborne Flying Fighters that take on a variety of forms, and Water Walkers, surface vessels that look like a cross between a sailboat and a space platform. The enemies method is to launch kamikazee attacks on the cities, wearing away this protective force field domes. With each successful hit, the domes change color, going from bright white, to progressively darker shades of red, and then disappearing completely. Once the dome is gone, the next enemy hit will destroy the city.

Using your joystick to maneuver through space, it's up to you to zap the Flying Fighters with your lasers (right action button) and drop bombs on the Water Walkers (left action button) while avoiding collisions with the fighters and the missiles sent up by the walkers. A radar scanner is provided at the bottom of the screen to help you locate the enemy and determine which city is under attack.



It also falls if you help regenerate the cities' force shields as they crumble under the enemies attacks. To do this, you must dive down until you are directly over a city and press the left action button to send an energy beam to the embattled metropolis. The beam slowly restores strength to the force shield. Be careful, though, your supply of shield energy is extremely limited, and steadily decreases whether you use it or not. To recharge your batteries, you must refuel at an energy depot, a pair of poles that is positioned between each city. The recharging process is similar to the shield repair process: Dive down so that you are just above the depot, and press the left action button to beam energy up to your ship. Keep an eye on the electrical arc that pulses between the two poles, though. As you deplete the depot's reserves, the flashing of the arc slows down. As long as there is some energy left, the depot will eventually restore its reserves. If the arc stops completely, you have completely depleted that depot, rendering it useless for the remainder of the game.

The game is over when your ship gets hit eight times within a wave. A wave ends when all the adversaries in it have been destroyed. Bonus points are then awarded depending on how many cities are left standing, and the strength of each city's shield. The game then resumes with the next wave of attackers. There are three difficulty levels, which can be selected from the controller's keypad.

No doubt about it, this is an Imagic game. The graphics are as good as anything that's been seen on ColecoVision. Cities and scenery are nicely detailed. Foreground and background scroll in realistic perspective. As in the Imagic tradition, each wave brings on a different type of adversary: Orion Fighters, Gravitines, Astro Sailors, a total of eight in all, each with its own unique look and attack plan.

But there's something missing from Nova Blast. It's hard to put a finger on, but with all the things going for it, Nova Blast just isn't as exciting as it should be. Part of the blame can be placed on the soundtrack: There isn't any. Well, hardly any, save for a few explosions, a short

beeping sound when a city comes under attack, and a high pitched trilling when your energy beam is activated. Designer Clinton Ballard didn't even see fit to provide the almost mandatory roar for your rocket's engine. In short, this game cries out for a sound track raucous with the noises of battle: Explosions, sirens, spacecraft whizzing past your ship. Instead of the excitement, there's only dead air.

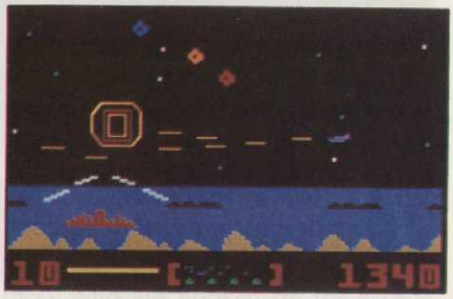
What's worse, certain elements of game play drag the action down. The enemy fleet always materializes off-screen, and usually at a great distance from the starting point of your ship, so each round begins with a long, pointless journey to meet your adversaries. The rules may be complex, but the game doesn't hang together. The idea of cities imperiled by aliens just doesn't have the apocalyptic feel of Missile Command's nuclear war, nor does it have the horrific effect that Defender has with its concept of hapless humans being kidnapped and turned into mutants. The entire game seems to have been put together haphazardly, and suffers for the lack of cohesiveness.

Scrolling shoot-outs for ColecoVision are few and far between. If you really hunger for one, then Nova Blast will at least fill the void. It's a good cart, but for those of us who have sampled the thrills of Defender, Stargate, et al, its thrills just may be short lived.

—D.P.

Nova Blast is an adaptation of an Intellivision version of the same name that Imagic manufactured last summer. The game is a bi-directional scrolling shoot-out; in other words, the ship is controlled like Defender. The enemy in the game varies from Orion Fighters and Gravitines to Sadeks. These numerous, but tiny, villains bombard the four cities on the ground, weakening forcefields until the city is destroyed. The player's job is to eliminate these warriors and to simultaneously grab energy from other parts of the planet to beam down to the city, thus strengthening its forcefield. When the player loses all four cities, or is hit eight times in one wave, the game is over.

There is no doubt about it. Nova Blast is definitely Defender-inspired. Protecting the cities is very much like guarding humans (as in Defender). Although there are supposed to be different enemies for the first eight rounds, there is little difference in the style of attack by the enemy. There is good news about the game, though. Each wave has yellow "water walkers" on the bottom of the screen (they resemble Monopoly railroads) moving towards the cities. Stopping them before they get to the city is as important as stopping the space enemies and adds some badly needed diversity to the game. Decisions about providing cities with energy add strategy that boost game play as well. For instance, some players may try to zoom around, trying to beam energy to all four cities, keeping them all alive, though at a weak level. Other players may just concentrate on one city, staying over it for almost all of the game, just blasting the bad guys before they can touch the city. It is usually best to mix these two strategies, trying to protect all the cities in the beginning and then protecting the lone city in later rounds when the action speeds up. The last positive feature of the game theme is



derived from the way the player loses. Since the ship can take many hits the player loses when he loses that one ship or all of the cities. This adds to the continuity of the game. However, the player is not magically reincarnated. And because the game theme is similar to Defender, it is a good one.

As far as actual play action is concered, the ship moves as briskly as the Defender ship, and has a rapid-fire action that allows multiple bullets on the screen that is so fast, that it would make a Centipede player blush. The enemy ships are no sitting ducks either, despite their lack of real variety. If the player does not dispose of the ships quickly, they will fly in a loop-de-loop pattern and bombard the city at what seems like the speed of sound. Ships rarely move that fast even in arcade games; Moon Cresta by Gremlin/Sega may be the only exception, and that obscure coin-op would only mistreat the poor player in this manner after awarding a free game at 30,000 points. There is no problem with control of the game. It is as tight, controllable, and precise as can be possibly wanted.

Graphically, the game is fantastic. There is a beautiful backdrop of a ringed planet, moons, and stars. There is no flickering in the game, except for the cities at the bottom of the screen as the forcefield weakens. This is to let the player know if the cities need energy. The radar screen is accurate enough but it is not terribly important in this game. Although the graphics are detailed, attractive, and fluid, the game is utterly quiet in the sound department. Thrusting the ship makes no noise. The enemies are silent also, except when they hit the player. There are warning signals for when a city is destroyed, but compared to other games of this type it is quiet, which may or may not appeal to individual players.

The game does not fare very well in the "miscellaneous" department. There is no pause control, and the player must look at the title screen for 12 seconds like on Coleco's games. The biggest drawback, however, is the lack of a two player mode. This game might have worked well as a two-player game where one player blasts the opponents and the other refuels the cities. Although what is in the game looks and plays well, it looks as though a minimum (8 to 12K) memory was used.

Nova Blast is perhaps the most precise, quickest shoot'em-up available for ColecoVision. Unfortunately for Imagic, AtariSoft will be making Defender for ColecoVision. Defender actually is a better game, and it is probably worth waiting to see what Atari can do with it. On the other hand, lone players who are sick of Defender or would prefer not waiting and buying a similar game immediately and at a better price will probably be very happy with Nova Blast. It would be nice if Imagic continued manufacturing announced games for ColecoVision. The announced Wing War and Moonsweeper look promising. Nova Blast, despite its faults, definitely shows that Imagic's ColecoVision programmers know their stuff.

—M.S.

HARD SELL

THE TIMEX SINCLAIR 2068

Was it too little, too late?

By Mark Brownstein

What can you say about a new computer that's about a year and a half behind the times? I grew up in the old "if you can't say anything nice, don't say anything at all" school of thought—I didn't always believe it then, and I don't now—not when it's your money that's at stake.

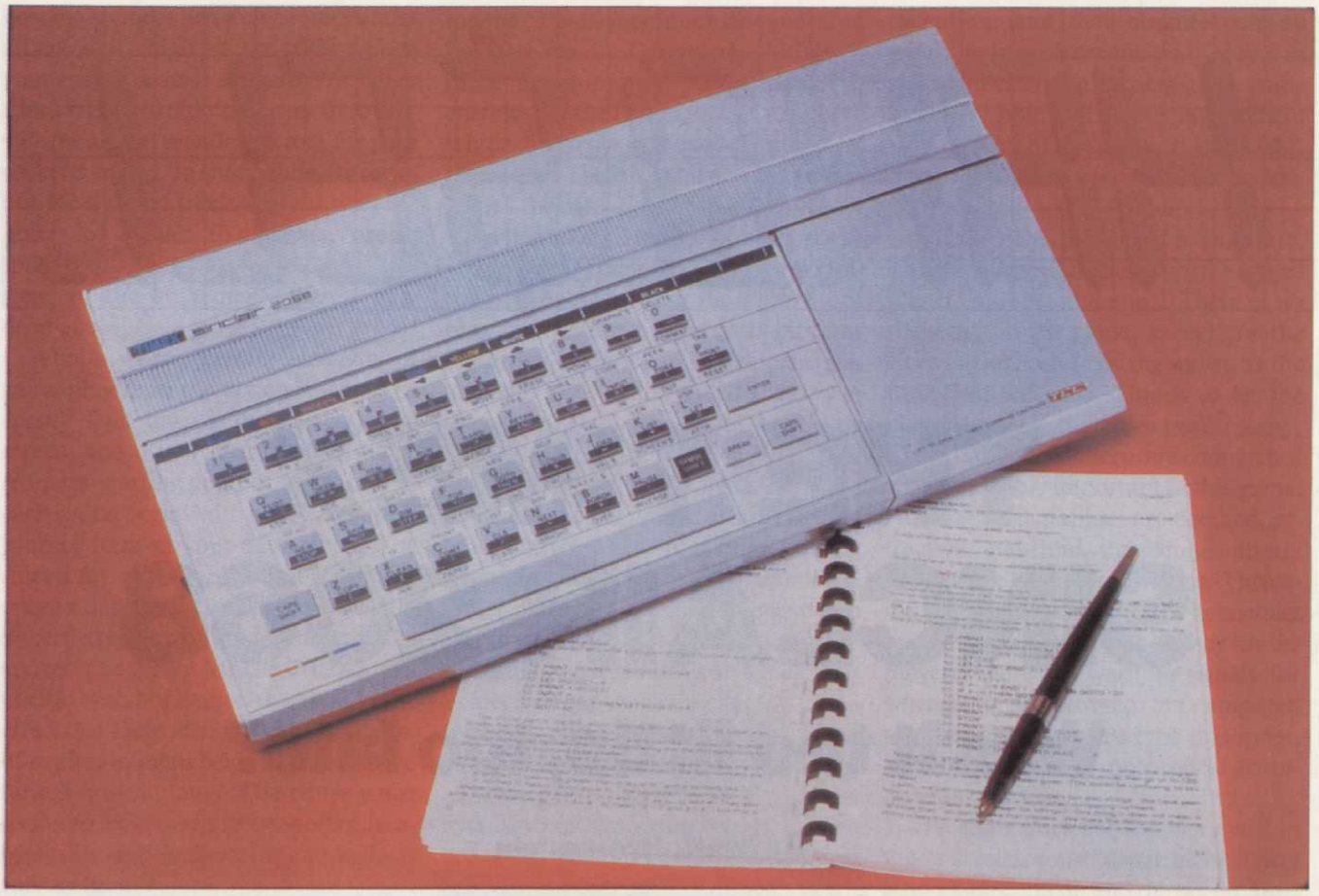
The Timex/Sinclair 2068 has some interesting roots. It was developed as a follow-up to the TS 1000, and its somewhat larger (expanded memory) brother, the 1500. Both were monochrome (black and white) units, both were inexpensive for their time, and neither was of much real use to its owner, essentially as a result of its ridiculous, undersized membrane keyboard, and its poor RF modulated video signal. The 2068 was developed by genius (no, I'm not kidding) Clive Sinclair, the same man who brought out electronic calculator kits years ago, for a fraction of the cost of any other; the man who brought out what was, for its time, the smallest truly portable TV set; the man who brought out a hundred dollar computer at a time when the next lowest priced computer sold for around $300. When it was developed in England a few years back, Sinclair's color computer was called the Spectrum.

Having been successful overseas, Timex decided to try its chances in the United States. The computer was dubbed "Timex/Sinclair 2000," and shown at last year's Consumer Electronics Shows. The 2000 received a bad reaction from the press, largely as a result of its undersized keyboard, which, if I recall correctly, lacked a space bar, among other things. The 2000 was retooled, a larger keyboard was devised, and was renamed the 2068.

From what I can tell, however, the innards are virtually the same as the 2000. In fact, if you don't look at the cover of the user manual, you'd quickly discover that you're reading the 2000 user's manual. It's obvious that this machine was developed for a market that no longer exists—the market of at least a year ago (a market that was paying $300 for a membrane-keyboard Atari 400, with only 16K of memory, and lacking a built-in BASIC).

Enough knocks for now. Let's look at the computer. The 2068 is an attractive unit, measuring roughly 15½ by 7½ by 1 inch. At the right side of the top of the case, a cover lifts up, exposing the "Timex Command Cartridge" slot. When you lift this slot, you have access to a jack for plugging in the preprogrammed ROM cartridges. At the left side of the device is a rubber ("Chiclet") keyboard, which is about a third smaller than a standard keyboard. On either side of the unit are Atari-compatible joystick ports, on the left side is the power switch. At the rear of the unit is a power jack (a large power supply, with a long cord), a TV output jack and a monitor jack, and ear and microphone jacks for connection to a tape recorder. Concealed behind a pop-out cover is the connector bus, for connecting peripherals (so far, only a printer is available—maybe) to the main processor.

The jacks at the rear follow a somewhat strange convention. With most devices, the part marked MIC (for microphone) plugs into the earphone jack on the recorder you are using to record from (in other words, if you wanted to record through your computer's microphone, you have to get *out*put from the tape recorder). Apparently, someone at Timex either got their labels confused, or thought that the purchaser wouldn't be able to figure out that the MIC cable will terminate at the earphone jack, and vice versa. In any case the cable from the MIC jack on the 2068 goes to the MIC jack on the cassette recorder, and the same goes for the EAR jack.



For the typist, the keyboard is an ingeniously devised torture device. In their attempt to use as few keys as possible, the designers have assigned *five* functions to most of the keys. They also seemed to feel that it was important to move many punctuation keys away from their normal positions on the keyboard (colon is on the "z" key, quotation marks are on the P key, etc.). For three of those five functions, extra keystrokes are required. The damned thing is so complicated that they include a separate chapter on *how to use* the keyboard, and also include a cassette tutorial. With the trend towards "plug it in and use it" gaining momentum in computer design, the 2068 seems to be a giant fall backward.

The Timex approach to the keyboard had some misguided good intentions. What they attempted to do is give the keyboard some smarts—by pressing a single key, entire words could be printed onto the screen. Theoretically, this could save some programming time. In fact, this approach has been taken by some competitive manufacturers and experienced programmers, who defined certain control-plus character combinations to represent often used phrases (LIST, GOTO, etc.). On the 2068, however, they attempted to make the keyboard do too much. As a result, it doesn't work at all well.

For example, if you want to type in a comma or colon (very common characters in most BASIC programs), you must hold down a SYMBOL SHIFT key, and find the character you want on the keyboard—you are almost required to take your eyes off what you're doing to make sure you find the right key. To delete a character or keyword, a backspace is too simple—with the 2068 CAPS SHIFT plus 0 does the trick. What was probably intended to be a timesaver, really isn't. If you can survive the hours of torture it takes to learn the keyboard, it may be barely adequate for your needs.

Ads for the 2068 identify it as being a 72K machine. This figure probably includes about 16K for the video processor, possibly an equal number for the keyboard control and basic, and around 4K of ROM (although these figures aren't available). The 72K 2068 is probably more like a 48K machine. The 2068 is capable of generating only 8 colors, a full alphabet and some limited character sets. The 2068 displays 256 x 176 pixels, translated to 32 x 24 available for text entry and programming. At this stage of development, that is fair resolution, but little to get really excited about.

So how does it work? I've already mentioned that the keyboard is a real pain—the multitasking of the keys opposes any efforts to do serious keyboarding. The 2068 does, indeed, generate 8 colors, however, in order to see the correct colors I had to readjust my monitor (this readjustment made all the colors generated by my other equipment look quite a bit off—if you are using your family TV set with the 2068, it may also require readjustment and may turn all your TV programs into weird colors).

The few programs I had the patience to input seemed to work well. The 2068 has some fairly sophisticated graphics and sound commands, allowing you to plot graphs, draw "circles" (semicircles or oval shapes, depending on the parameters you set). Borders, screen color, and type color can be set by the programmer. Although there are only a few preprogrammed graphics characters, you can also design your own graphics characters.

The 2068 has three voices, three noise channels, and allows you control over

ten waveforms. Although it takes a bit of number crunching, you have pretty good control over the sound output. While we're on the subject of sound, the fact that sound *doesn't* come through your TV set or monitor is an important one. Aside from the Apple and PC computers, sound is designed to come through your TV or monitor speaker. This allows you to adjust the volume, and usualy sounds better than the tinny little speaker that is built into most computers. If you want to go through the trouble, you can connect a jack to the earphone output of the computer. This may be fine for a monitor, but if you have a TV set, you'll probably just have to sit and listen to your computer to beep at you.

The manual is well-written, guiding you through increasingly difficult material as you learn basic programming (or fine tune yourself on this machine). The manual is probably the best thing about the 2068.

If you're going to spend the $200 or so that they want for this computer, you should know about its potential, in terms of support, expansion and other important matters. Primarily as a result of its general weaknesses (terrible keyboard and on-computer sound), the 2068 will probably do very poorly competing against such venerable devices as the Commodore 64 and Atari 600XL. And the expected slow sales of the 2068 won't attract the necessary third party developers to fully support the machine with improved software and peripherals. You will, therefore, have to be content with whatever Timex chooses to release for its computer.

At present, the only data storage device is a tape recorder (any good quality portable cassette machine should work). Input and output are alow, and the computer is relatively sensitive to variations in volume and tone settings. It takes a few trial runs to set the recorder up for proper loading into the computer.

A 40-column printer (the 2040) should be available soon. If you don't mind printouts on adding machine paper, the 2040 should be okay for you. However, if you intend to do word processing, neither the keyboard nor printer will be of much value.

A disk drive has been hinted at by Timex, but I doubt whether anyone will see any point in bringing out such a device for a computer as limited as the 2068. A whole line-up of titles of cassette software and Command Cartridge programs has been provided by Timex, although I still haven't seen any.

Timex is a big company. They have a lot of money to support the 2068. However, my guess is that they'll initially release a small selection of titles, and soon stop development of any more. Although Timex has a lot of money, they aren't dumb enough to throw good development bucks into an unsuccessful product.

Finally, how well does the 2068 play games? There are no surprises here. The sample cassette games were not particularly good. Timex is nothing, if not consistent. Graphics were amateurish, game play as well as sound effects were dull. This could be a result of poor programming or general equipment limitations.

My recommendation is this: If you are seriously thinking about buying a Timex 2068—think again. If you want your kids to stop wanting a computer, get them this one. ▲

VIDEO GAMES INTERVIEW

Nolan Bushnell

A Conversation With The Father Of Video

By Mary Claire Blakeman

When *Video Games* contributing editor Mary Claire Blakeman arrived to interview Nolan Bushnell he had just stepped down as chairman of Pizza Time Theater. While he was concerned about the fate of the company,the inventor of Pong and founder of Atari, was relaxed and eager to talk about other ventures he is pursuing. With an interest in more than a dozen companies, Bushnell is developing a variety of projects such as a computerized automobile mapping system. (No more arguments about which way to turn when you're lost, just punch up a screen and see exactly where you are.) He is also continuing to develop the Androbot and makes an open invitation to programmers to develop software for the robots. And, since he will no longer chair Pizza Time, he plans to put more of his engineering talents to work at Sente.

Sitting in his deep-green carpeted office with matching green walls and a bank of incandescent lighting, Bushnell also showed off his latest new desk, a horseshoe shaped high-tech job complete with a computer monitor on each end which can be seen through the clear laminated plastic top. An IBM PC sits in the middle of the desk with a retractable covering and a glowing digital panel along the front of the desk serves as a inter-office message receiver. At the top of a button, Bushnell can lower window shades or raise an abstract wall hanging to reveal a full-sized video screen. While Bushnell took personal pride in this addition to his office he also sees it in a practical light: He may end up marketing the desk to other high-tech execs.

While his desk is a highly sophisticated bit of equipment, Bushnell still keeps his numerous ideas for video games in a type of student's notebook with graph paper pages. In fact, he has several of these notebooks, one for Sente ideas, one for Androbot and so on. After seven years away from designing games (due to his non-competition agreement with Atari) Bushnell says he is happy to be back at the drawing board and sees Sente as an avenue for innovation.

For more of what the "father of video games" had to say, read on.

VIDEO GAMES: Now that you're no longer so involved with Pizza Time Theater, what will your position officially be with regard to the video game business?

NOLAN BUSHNELL: Probably chairman of Sente. I'm really excited to be able to focus more on the game business again.

VG: And how many companies do you have now?

NB: Between ten and thirteen.

VG: You say you'll be able to focus more on the game business. Will you be designing more games?

NB: Yes, and working on some projects that I've wanted to work on for a while. When you're chairman you often end up dealing with a lot of b.s. a lot of the time. I feel like one of the things I'm doing is that I don't want to have to work as hard as I used to. When Pizza Time got into a little bit of trouble I decided that I sort of had to roll up my sleeves and jump back in...and that was really sort of ruining my lifestyle.

Plus I found that a lot of the things that are really necessary in the restaurant business require skills that I really didn't have. You've got to be a lot harder as than I am. I'm used to dealing with highly creative technical people, highly motivated people. The restaurant business has some of those people but not as many as you'd like. It seems like there are those people who respond to the carrot and those who respond to the stick, and I work really well with people who respond to carrots and not very well with people who respond to sticks.

VG: Was that your biggest lesson about

Photograph by Cooksey-Talbott.

the restaurant business? Did you learn anything else out of that experience?

NB: I think I've learned that one should not try to do a full time job part time. I think the thing that I learned is a little bit about my own mortality. I thought that I could get myself out of any jam I ever got myself into. And I believe that's true if I could focus on it 100 percent of the time. But I'd gotten enough things happening at Catalyst that it was just totally impossible. I was working 18 hour days and, I think, not being effective.

VG: What exactly is the function of Catalyst Technologies now?

NB: It's an umbrella corporation that provides administrative services to a lot of the other small companies.

VG: So who is taking over the work at Pizza Time?

NB: Randy Pike and Henry Montgomery.

VG: Have they been in the company a while?

NB: No. Montgomery is the guy who helped straighten up Memorex and later Saga Foods and recently, a company called Micropro.

VG: At Atari, they found that someone who was good in textiles (former president Ray Kazar) was perhaps not fully able to translate his knowledge to consumer electronics. And, with your experience dealing with Pizza Time, do you think there's a line where a corporation has to stick to what it knows instead of trying to diversify so much?

NB: I think it's all a matter of the person. I think I'm pretty good at up to $100 to $150 million in sales. I think you have to fundamentally change your business style. But I've sort of changed in another way. I'm never going to be CEO (chief executive officer) of another company. I think that I found that my skills and talents really lend themselves to starting companies, being a venture capitalist, hiring the right people, and writing plans. I will never attempt to execute another plan. I will execute through others.

VG: Why would you have to change so much? What qualities do you think it takes after you get over $150 million in sales?

NB: I'd have to feel much, much better about firing people. I've just tried that over and over, holding people accountable, doing follow up, and I just tend to not do that well. I think one of my biggest mistakes is that I consistently have 50 percent of the people working for me that should be fired. And I have a hard time doing that . . . knowing full well that they should be fired.

VG: But you said you are good in hiring the right people or the creative people. What do you look for in them, in that 50 percent that you should keep?

NB: It's a funny quality but the best thing I can describe is "fire in their eyes." And it's almost a sparkle. And a need to accomplish as much as a want to accomplish—not to succeed. Succeed to them is almost secondary, I mean in the abstract sense, it's secondary to really making something happen. They want to build, they want to create, they want to flourish.

VG: Have you changed your management style now?

NB: Oh yes.

VG: From what to what?

Photograph by Cooksey-Talbott

NB: From less numbers-oriented to more numbers-oriented.

VG: So you were perhaps more people-oriented before?

NB: Yes. And I believe that I understand more about growing companies at the right speed. I only knew one way and that was fast. I'm starting to see now that there are certain perils to hyper-fast. I think you can be aggressive without being hyper.

VG: You've been quoted in giving an explanation of the terms from the game GO as "Atari means check and Sente is like checkmate." But people who play the Japanese game of GO say there is no such thing as checkmate in that game . . . that Sente is more a quality of momentum.

NB: For people who are sophisticated game players, there's no . . . well there's a Japanese proverb that says, "He who has Sente always wins." Or something to that effect, that's a crude paraphrase. But Sente literally means upperhand and it means you consistently make moves that force your opponent to answer you which is the literal meaning of Sente. If I have Sente that means I make a move, you answer. If I make a move that you can ignore, then I made a Gote move. So, Sente, in an abstract sense, is a stronger position to be in because I could make a Sente move and even if you make an Atari move I could ignore it, and inflict you greater damage.

VG: In the game, a person doesn't always have Sente does he? Doesn't it change back and forth?

NB: Not in the perfect game. . . .

VG: Okay. But translating that into your company, what does Sente the company mean to you and do you think the "Sente Solution" might turn out to be a Gote move?

NB: Oh absolutely not. We have a huge backlog of orders. We understand that Nintendo is unveiling a "Sente Solution." We understand there are other moves in the works from the operators . . . . People have been copying me ever since I started. It is a fait accompli. The only game that is selling is a Sente game today.

VG: How else then do you see the company? What else does Sente mean to you?

NB: Sente will be the vehicle with which I can innovate once more. I think the business has stagnated and it's stagnated because of bad economics. And one thing I wanted to attack first was the bad economics in the business and to do that through the Sente Solution. Once the economics are straightened out.

NB: If you came out with the most perfect thing right now, I think that it would be marginally successful because of the damage that's been inflicted on the capital structure of the business. I believe that the arcade always has to pioneer away from what can be done in the home, to a certain extent. To just do video games, I mean if you look at some of the better quality home computers the video game quality that you can get at home is very close to or approaching what you can do in the arcades. One needs to be able to create a level of separation. The arcade always has to be "first run" just as surely as when televi-

sion came into the home, B movies were relegated to television channels. There was no longer a theatrical market for B movies. The same thing is happening in this business. There is no economic ability to make money on a B movie, except on its very first release.

So the "legs" (longevity of a game's popularity), that we once had have been taken over by the home computer. That says the arcades have to continue to focus on doing things that people cannot do in their homes. That's why we have the SAC 2 system as a simulator. You will not be able to be rocked and rolled and pitched and yawed and lifted off the ground by your home video game. So that sort of experience will be the hallmark of the arcade of the future.

VG: On the day you unveiled the Sente Solution, you remarked that the idea might take about two years to catch on. Do you still see that as the time table?

NB: Oh absolutely. As pompous and swaggering as I am on occasion, to believe that I'm going to dominate an industry from zero in a year and a half is probably not realistic.

VG: You'll give yourself a little break, right?

NB: Right.

VG: What else, besides the simulator, do you think will be the hallmark of the arcade of the future?

NB: Size. I think you'll see that size will become a more and more important factor. Group participation. Socialability... I believe that the arcades have been heavily focused on man-machine, man-machine, man-machine instead of man, man, man, woman, woman, woman, machine. And I believe that the arcades have to be a social center for people interacting with people as well as people interacting with machines. The machine should be a facilitator of that interaction rather than the inhibitor.

VG: That actually ties into something you said a long time ago about being sorry that Pong and games were being marketed only for 14-year-old boys. What was that original vision that you had?

NB: Well, it's still my vision that we have coin sports. That, as surely as it's fun to compete out of the backyard on a Sunday afternoon in a game of touch football, and it's fun to play chess with your friends over a glass of cognac at midnight, it's also fascinating to compete with your friends in a video world of "x" dimensions. I think that too many of the games have been repetitous. Successful but at the same time, I think it has been an intense but not a satisfying experience as it could be and I think ultimately, people have burned out.

I mean, to continually be challenged by the machine, the machine is going to always be able to win and so the total dedication that's necessary...it becomes almost never ending. And so ultimately, the "master of the machine" is an elusive target, whereas, people skills, those things we want to build... I think it's better for one's ego if every once and a while you can have a good, healthy competitor where you something win, he sometimes wins, and it's a give and take rather than this absolute one sided domination of the computer over the mind. I mean the computer always wins, ultimately, and so it's better on your ego if somebody can beat you but you can also beat somebody else.

VG: Isn't that good, healthy competition with someone who is about at your same skill level—isn't that the essence of games?

NB: Exactly.

VG: Yes, if a novice tennis player tried to play against Billy Jean King, you'd probably get wiped out.

NB: Yes, but a good game should allow your opportunities to handicap so that even though you're playing against Billy Jean King, if you choose, you could handicap in such a way that you could still have fun competing against one another.

VG: How do you see that translating then into arcades—you've mentioned they'll be more like social centers, maybe larger, what could you see more specifically concerning games? There's already games for several players.

NB: I'd rather not go into that too much, but Chuck E. Cheese and Zapp's, in terms of clients, try to do some of that without really having the technology in there because we've had to buy games from others.

VG: What about Zapp's? What are you going to do with that?

NB: It's been very successful.

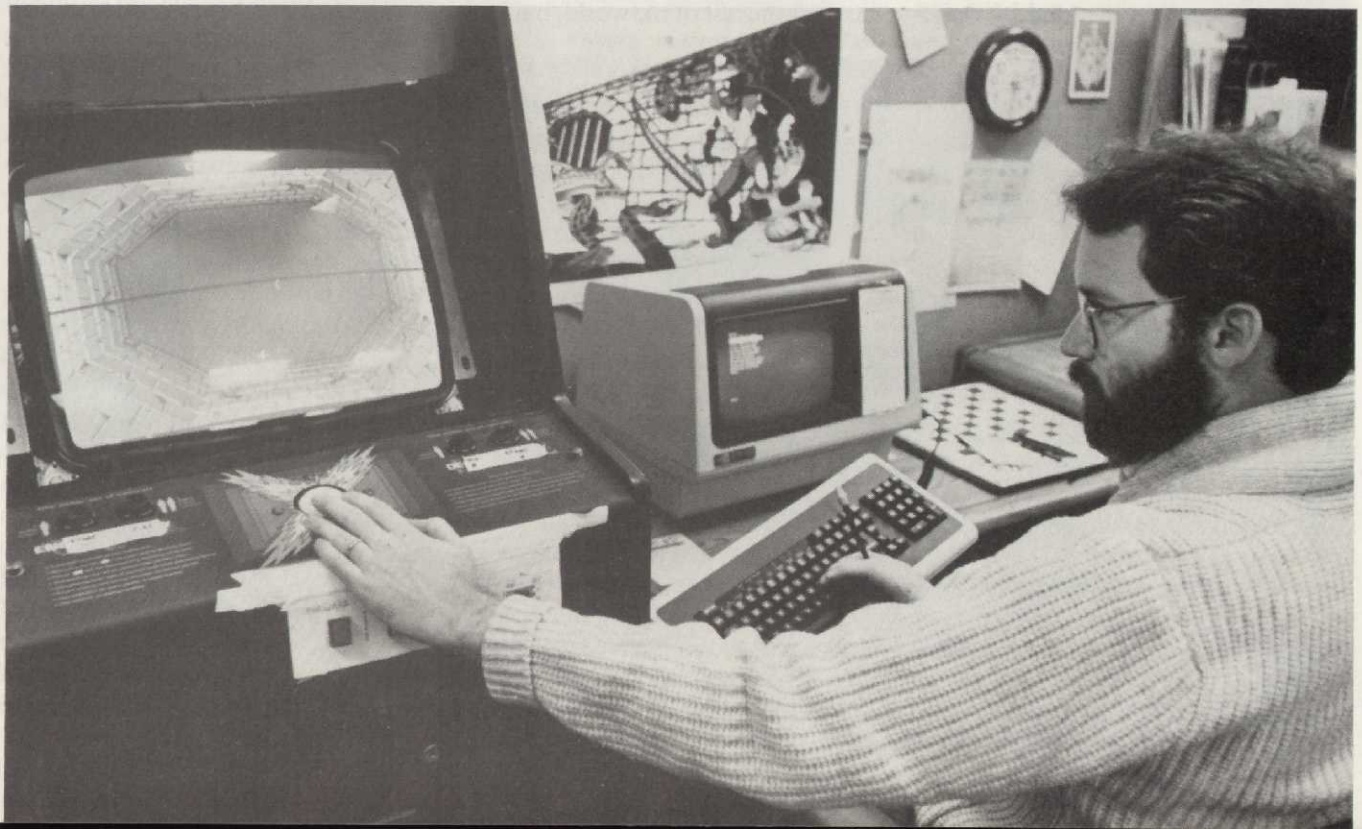
VG: There are three of them now?

NB: Five.

VG: Where are they?
NB: Tampa, San Jose, Dallas, Reno and we will be opening one in Boulder.
VG: Will those be opened newly or will you continue to transform the Chuck E. Cheese units?
NB: Both.
VG: How many do you think you'll end up with?
NB: I don't know. That's very hard to say? We're not going to grow them as quickly as we did the Chuck E. Cheese's, that's for sure.
VG: What about where you see the business now? You've talked about the need for the economics of it to be shored up—what else do you see about the industry as far as its evolution historically now?
NB: This business is now in a period of indigestion in which there are probably two to one as many games on location as there are players. Many of them are not paid off. This business is looking for an innovation. They thought they had it with the laser disc game and now they don't believe.

The business has constantly look for something that never happens. They looked for a game that once they buy it, it will last forever. They look for a new pattern. They all of a sudden found out that laser optic video disc games don't have "legs" either. That people will play them for a while and then tire of them. And whenever anything new comes out, when videos first came out they said, "Oh, these should last forever." Well, they didn't. Videos as a generic type did, but the problem with laser optical video disc games is that they have been very, very expensive. And though they earn very powerfully, (at least the early ones did), that now that an arcade may have four different laser optical video disc games in it, people are blase about them.
VG: Do you think that the public's attention span is getting shorter? That ten years ago, you could come out with something that didn't have all the sound and color and graphics, but now you really have to have something more spectacular to grab attention?
NB: The public's attention span has always been infinitesimally short and it always will be. And, it only appears, sometimes, to have a long attention span collectively because there will be people who are just getting introduced to something so they will have a six week attention span. There are some things that have longer-lasting feelings. There are some movies that you can sit through two or three times, but not many. That's just going to happen over and over and over again. And so I think that it's not correct to say that the public has all of a sudden gotten that. It's always been that way and will continue to be.
VG: You don't think that's a modern phenomena. Maybe a hundred years ago, life was slower. You could read a novel and take things a little bit easier?
NB: No, I think it's just relative. I think life has speeded up, communications have allowed a smarter level of person.
VG: So it's not a hallmark of the age then?
NB: Well, I may take that back. Maybe once when it took you two days to get to New York by train, you did have time to read a book. You didn't have in-train movies the way you have in-flight movies. So, it's easier to be entertained today. You have to work at entertaining yourself a little bit more than. Maybe that allowed you to have a longer attention span.
VG: Well, it's just curious to think about having a game that could perhaps be a little bit slower moving than a lot of the games we have now where you have to have your attention on a constantly moving target. Have you ever thought about that in designing a game—the attention span and what it takes?
NB: Yes, we want a person to lose sense of self to a certain extent in some of the games. They become part of the action that's happening. It's like, there's a time in typing when you forget that you're pushing "a"... you're thinking letters and they're appearing on the page. You become totally unaware of the physical reality of your body and the physical reality of the typewriter. In a good video game, that generally happens as well, with the current dynamic.

Now, take that strategy and contrast that with one in which you're not only intimately involved, you have a concept of self — but also a concept of an opponent. That's a different mental set. Each one of them has their place in video



games but I think that we have excluded the other, (the competitive element) to our detriment.

VG: So, in the games that you design, what else do you think about, what else do you look for? Like you said, you want a person to lose their sense of self, what else goes into a good game?

NB: Risk and reward. You want to make sure that a person has to be at peril in order to gain that reward. We try to always balance that. Little risk, little reward. Big risk, big reward. It's like the old story of, you know, how close is the spider getting to you in Centipede, how many points do you get?

Then you have the question of reflexes. How much harder does the game get on successive times.

((Have you played Snakepit yet?

Yes

What did you think?

It was pretty good.

Well, it's that kind of build up.))

VG: So taking that idea of what you would look for in a good game in the past, how about what you would look for in a game where you are going to emphasize that opponent factor a little more? Would you do anything different in your design?

NB: Oh yes. You would make sure that the opponent that you're playing has strategy which, in order for him to score against you, he has to put himself at risk. The same sort of dynamics. Then, we also have to make sure in a two-player game that that there cannot be hide-and-seek, come-and-get-me kind of strategies. That is, both players have to be maximally aggressive. The passive strategies in which both of you are being passive, and so if you're the active person, you get nailed—you have to keep those strategies out. So theres an inbred bias toward action.

VG: So do you have anything like that on the drawing boards?

NB: Sure do.

VG: Getting back to the industry as a whole, you've talked about what your original vision was and what it still is, but what about the future?

NB: We'll see much more capital going into the arcades in terms of equipment. A typical arcade will have three to six simulators. A typical arcade will have several SAC 4's—which I will not describe. The typical arcade will come back and be larger and perhaps a better meeting place.

VG: Do you think it's moving towards more of a Disney-type idea? You touched on that a little with the big motorized animals in Pizza Time Theater. Will the arcades be more of that type of family entertainment center?

NB: Not really. I think that amusement parks are probably the only place where you can get away with the true mixing of the population. Teenagers are pariahs to the rest of the world. Basically, the rest of the world likes to exist without teenagers. I used to think that when I was a kid, but I think it's true. We've done a lot of studies and it's a fact that you build places for teenagers and then you build places for the rest of the world, but you don't try to push them together in any kind of meaningful way.

VG: And do you see that continuing?

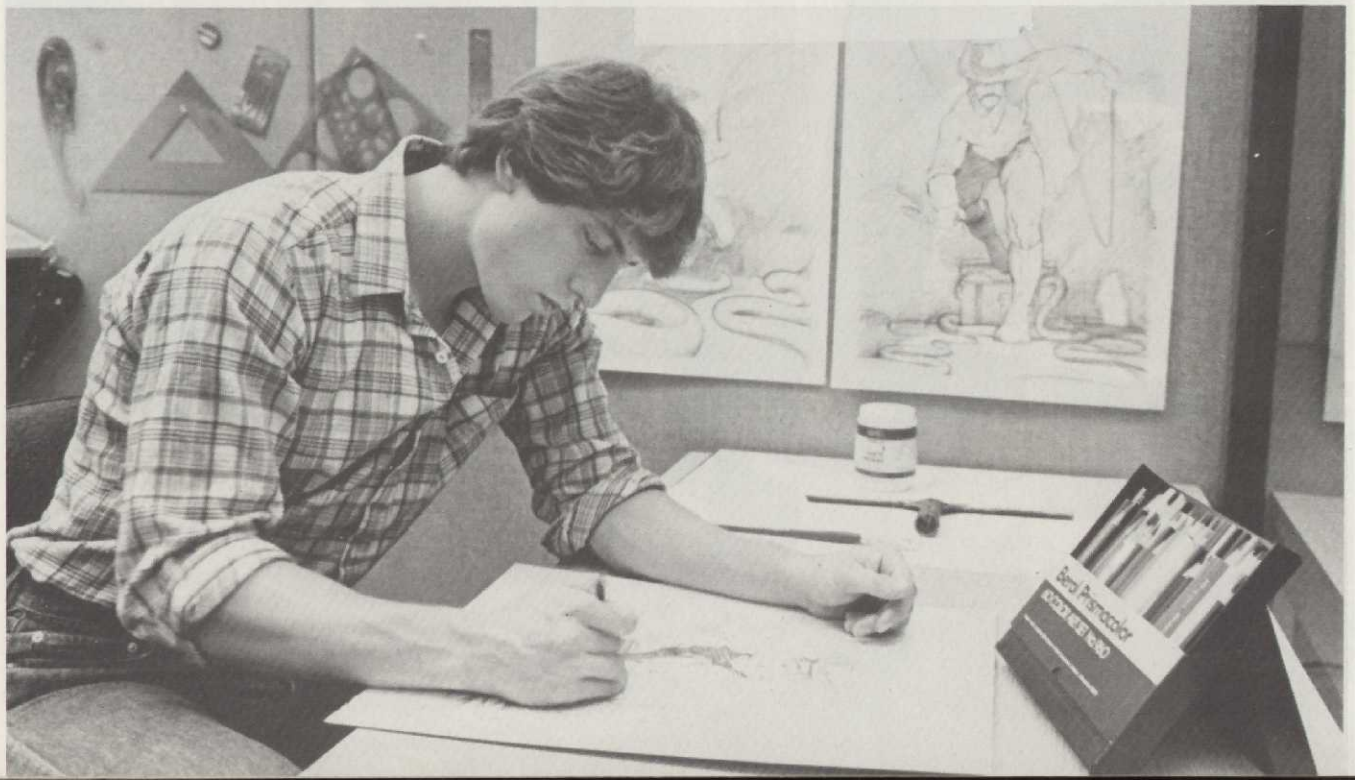
NB: I think that it may be a major theme. They're just having too damn much fun for the rest of the world to tolerate. We don't let unaccompanied teenagers into Pizza Time Theaters. We've got one of the best game rooms in town but we've surveyed over and over again, and parents just don't like their little kids messing around with the teenagers. When they grow up and become responsible adults. . . maybe.

VG: So something like Zapp's is really for the game player who has grown up? I mean there's liquor there and all. . . .

NB: Yes, it's 21 to 35 year olds. It turns out, we would have a whole group of teen places in Pizza Time, except the "city fathers" don't want it. The last thing that city fathers want is a place for teenagers to be able to go. They'd much rather them hanging around on the streets. So, city fathers, if they had their option would deport all the teenagers out of the city limits. God forbid they should have something to do.

VG: Well, a lot of people who read *Video Games* Magazine are teenagers. . . so what do you see for them? If they can't go to Pizza Time Theater unaccompanied and they're too young for Zapp's, then what?

NB: If I could get around the "city fathers" problem, I could build some of the best places. . . and they'd be a combination of a malt shop with some very, very aggressive rock music, video music,



multi-media shows, small dance floor, strictly enforced regulations and some very, very hard video games. I could put games in a teen environment that would be totally intractable to a 35 year old or a 40 year old. And if I didn't have to tone some of the games down, I could really blow the sox off some teens.

If I had places where I knew that it was going to be aimed at the 14 to 22 year old.

VG: Could you give an example of something that would be a really "bad" game?

NB: There would be some things that could be done with adventure games on a video screen which would essentially a buck for an average game of 15 minutes long, that the typical teen would walk away dripping with perspiration. It would be the kind of game where afterward, you'd have to go, sit down, take a deep breath and put it all together again.

We call those "predatory" games... where it's out to get you, and you know it.

VG: So are you ever going to put a game like that out?

NB: Someday, yes, I think so. I wouldn't do it without have a chain of places for it to be. Because, by trying to appeal to everyone, you have to sort of flatten the games.

VG: What about your robots? What's happening with them?

NB: Ah, robots—my love. The robot project is the damndest project I've been involved in. The technology is so hard. But we're finally in production. I think the market is about ready to explode. In fact, one of the things I'd like your readers to know is that I want to put together a team of software programmers all over the nation to work on application programs for the robot. Now we have a good development system and we'll provide equipment and market product. The idea, I think that the right people right now getting into robots, could make a million dollars like the first ones who bought Apple computers made millions of dollars. We will market the software and the first person that designs the equivalent of Visicalc for robots will not only make a million dollars but will probably make a hundred.

VG: OK, we'll let the budding programmers out there know that.

NB: People who are seriously interested in being in the forefront of the robotics explosion should write to: Androbot, 101 E. Daggett Dr., San Jose, CA 95134.

VG: Given that we're right here in Silicon Valley where supposedly so much of the technical talent is, what do you think is happening with American innovation? Why would you make an open invitation like that to programme around the country?

NB: The guys out here have all gotten too rich.

VG: So if you're still in Dubuque then maybe you might have a chance because you're still scrambling?

NB: I've always been a big believer in that what we have here in California is opportunities for people. I don't think

Check E. Cheese, mascot of Pizza Time Theatre, with his Androbot "cousin" Topo.

the people here are smarter, more clever, or better educated than the people in Dubuque. I believed that they're organized here and they have the opportunity to see what's happening. I mean, the guy in Dubuque has probably not seen an Androbot and he probably doesn't have a store around him that sells them. So he is behind the eight ball. How's he going to get an Androbot if he doesn't know they're there and if he doesn't have a store to get one. Whereas these guys around here, I've done enough speeches in the area and presentations that they knew pretty much what Androbot could do eight months ago—eight months prior to them going out into the market. They've got a year lead on that guy in Dubuque... at least.

VG: Speaking about innovation, though, you quipped to a convention recently that most American innovation happens 24 hours before a trade show. But you also said that people should look to science fiction to see what will be happening in the future.

NB: Absolutely.

VG: What kind of science fiction do you like?

NB: All of it. I like the futuristic science fiction. There's a lot of science fiction which I call quasi science fiction in which they combine science fiction with history or barbarianism or science fantasy. I don't believe there's a lot to learn from the Conans and some of those, whereas the ones that are written by futurists are pretty valid. For instance, *Dune* is an interesting story but I don't believe it's as powerful a harbinger of the future as something by Asimov, or Bradbury.

VG: Do you have a favorite author?

NB: So we could go read Asimov and find out what Nolan Bushnell will be up to? Well, he wrote *I, Robot* in 1952. I almost thought that I'd call the company International Robotics and Mechanical Men. But that would violate one of my principles of naming a company which is, it has to be one word.

VG: What other rules do you have about naming a company?

NB: It should start with a vowel or a "V". It should not be too descriptive, unless you're convinced that the area is so big that you won't have to change it later on. Whenever I've violated those principles I've wished that I hadn't.

VG: Getting back to video games a little, you said earlier that you will be concentrating on the games more so is that going to be taking more of your time.

NB: Yes.

VG: There's been a lot of talk about peoplegetting burned out on video games and the novelty wearing off. Do you think a time will come when we'll all have to grow up and forget the games?

NB: No, I think video games will be a legitimate recreation form for the rest of my life.

VG: Anything else you want to say to the kids of America who play your games?

NB: Balance. Video games are great but if you're playing more than three or four hours of video games a day, it's way *too* much, you need some balance. Even as great as video games are, you shouldn't keep from having a nice game of football on a Sunday afternoon with your friends. ▲

BOOK BEAT

Biting the Computer Bug

By Richard Goodwin

If you've been bitten by the computer bug then *The Complete Buyer's Guide to Personal Computers* by Tim Hartnell and Stan Veit (388 pages, $4.95, Bantam Books) is definitely the place to turn to when making such weighty decisions as to which system to eventually purchase. (The first is always to talk the matter over with friends who already own personal computers.)

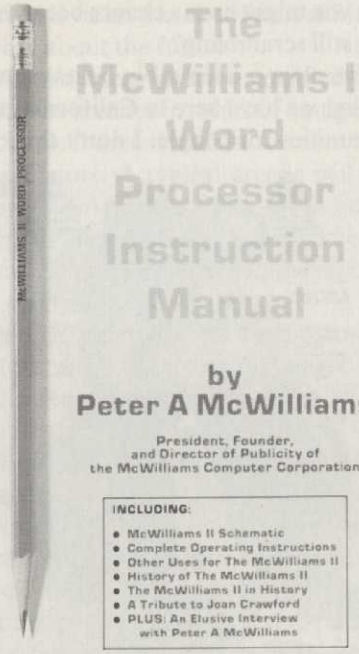
This thick paperback is being touted as a complete, up-to-the-minute guide but given the idiosyncracies of book publishing, it's not so current in some respects. Yet, it is a very good source book and a wonderful starting place.

The authors, both highly experienced and intelligent men, present you with facts you need to know about computers from a brief, well-written history to simple programming instructions and sample game programs.

Perhaps the most important part of the book comes early, "Choosing the Right Computer." It makes you ask yourself all the questions necessary so you don't come home with a $4,500 system just to play Pac-Man. Functions, peripherals and the differences between hard disk and floppies are clearly presented in an easy-to-understand format. Beyond that, they get into such areas as choosing the right dealer and right warranty, something most other guides I've seen have barely touched.

For example: "Be sure you have the same kind of guarantee for your peripherals as you do for your computer. . . . Be sure that these are covered by the same kind of service arrangements that the computer has and find out who will do this work and how much it costs." This is a sample of the simple and sound advice that many never consider. The book is filled with the information.

The section listing the various personal computers themselves is really only an overview. Not every entry is complete and statistics are made available on



selected models, admittedly the more popular ones. Some, like Atari's My First Computer, have never been released or have since been withdrawn from the market, automatically dating the book. However, Macintosh, Apple's scaled down version of the Lisa, gets mentioned, while the trend-setting PCjr is not included.

Not everything is here but it is more complete than most and is a help in presenting alternatives to the better-known systems. Comparisons can be made by flipping pages with no one pressuring you to buy the more expensive model.

The section on programming is very simple and straightforward but is *not* the place to learn how to use the machine. In trying to be an all-things-to-all-people volume, the book falls short in being a complete education. Also, the 75 pages devoted to programs appears endless with most of the games being good only for the beginners.

Another nice touch is the section listing magazines, books and networks to help plug you into the growing community of personal computer users. There is a treasure-trove of information available and is a unique highlight.

This is easily one of the best volumes to get when considering a machine. It certainly helped me figure out what I want. I'm looking for a system with a good word processing design and that's easy to understand, use and maintain.

This brings us to the second selection of the month *The McWilliams II Word Processor Instruction Manual* by Peter A McWilliams (144 pages, $3.95, Prelude Press) has one thing that puts it above every other manual released: It comes complete with a word processor. And yes, it only costs $3.95. What kind of word processor can you get for that money?

In stylish fashion, the McWilliams II is long and sleek, lightweight and easy to use. The CPU is carefully covered in wood until needed and it's 2,000 byte capacity is more than adequate. It is very simple to use with the printer port at one end and the deprocessor at the other end.

McWilliams himself has written this operating manual with style and wit and goes in-depth on the manufacturing of the machine and includes a photo section on celebrity endorsements of the machine.

Perhaps the most interesting reading will be found in the interview with McWilliams. The timely piece catches the creator unaware of certain "transgressions" and the demise of Osborne, a system he highly admired.

The book is filled with marvelous facts and using the word processor was indeed a joy. I used it to prepare this very column and see, it works wonderfully.

By all means, the McWilliams II Word Processor is the number one system to get before any other and the manual is superior to most.

I have already ordered a case of the McWilliams II and look forward to a long career with them. ▲

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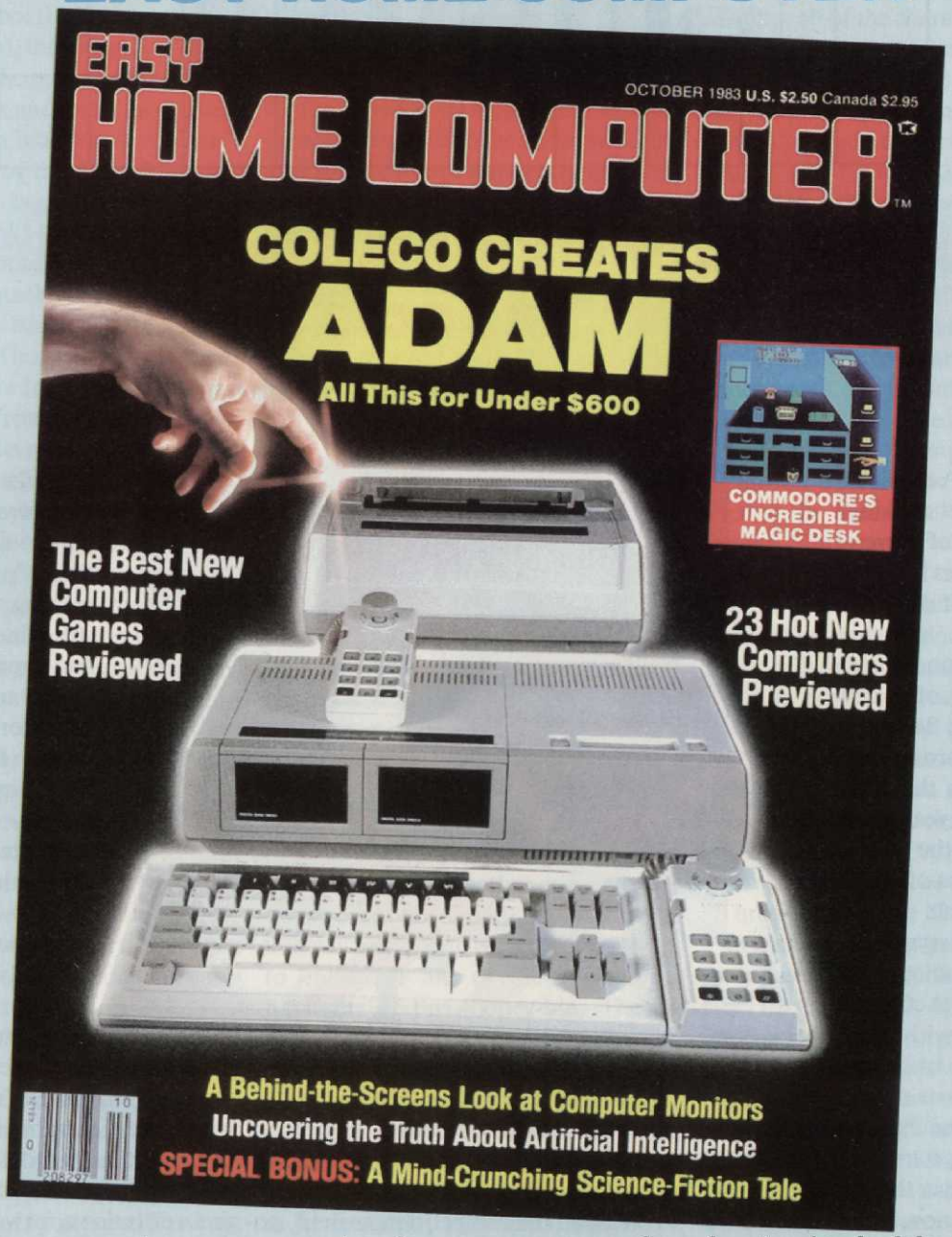

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COMPUTER CORNER

Computer Game Adaptations: Great Expectations

By Dan Persons and Ted Salamone

When's Activision gonna get cooking? With release of several ROM cart games for Atari computers, their entry into the computer software field was announced with all the hoopla of a new space program. But so far all we've seen are adaptations of games that date back at least a year and a half. Worse, the games hardly make use of all the power available in the Atari computer systems.

Strangely enough, the big noise with Activision still remains with their games for the old Atari 2600. Recent carts such as Space Shuttle and Pressure Cooker have stretched the system's abilities further than anybody ever thought imaginable. What's needed now is someone at Activision with enough guts to do the same sort of trailblazing with the Atari computers. Whether we'll ever see that, given Activision's large roster of hit games that have yet to be adapted, remains questionable.

Meanwhile, two other companies have entered the ROM cart based software field. Sega has released their first (and, considering the company's acquisition by Bally/Midway, possibly their last) two arcade adaptations for Atari computers. And Sierra On-Line, who to this point had been releasing their off-beat Atari compatible games on cassettes and disks, has now introduced their first original ROM cart game.

With all the competition around, no company, not even Activision, can afford to rest on its laurels. With all the talent there, Activision must have someone willing to start experimenting with the Atari computer's abilities. Let's hope we see the fruits of those experiments very soon.

—Dan Persons

RIVER RAID

(Activision/Atari ROM Cart)

A couple of years ago, designer Carol Shaw put to rest the myth that aggressive, fast-paced action games appealed only to males. The game Ms. Shaw created, **River Raid**, owed nothing to the "cute" school of video gaming. Instead it was steamlined, non-stop slide-and-shoot for the Atari 2600, and another top-seller for Activision. Now that the folks at Activision are releasing their most popular titles for Atari computers, it only makes sense that Ms. Shaw's creation was a shoe-in for a ROM cart translation.

Ready to earn your wings? Good, because your going to need 'em in this one or two player game. Your joystick controls a sleek jet, barreling at low altitudes over a vertically scrolling river. Left and right on the stick slides your plane in those directions, forward and back controls your speed. Your mission is simple: Search and destroy. Battleships, helicopters, hot air balloons, they're all fair game. Press the fire button to hit them with your machine guns.

Watch out, though. Letting your jet hit any of the targets, or either side of the jagged shoreline, will result in your destruction. And remember to keep an eye on the fuel gauge at the lower left of the screen. You lose fuel at a steady rate, and can only refuel by running your plane over the multi-colored fuel dumps that turn up in the midst of the river. The

slower you travel over the dump, the more fuel you acquire.

Your enemies are no pushovers. Sure, at the start of the game, they're polite enough to stand still and wait for your bullets. But, everytime you pass a bridge (remember to shoot the bridge out first, or face extinction), the stakes are upped, and the ships, helicopters, and balloons start moving back and forth, targets that threaten to crash into you if you can't knock them out of the skies. At higher levels, enemy jets begin sweeping across the playfield, tanks turn up onshore to fire missiles at you, helicopters come equipped with machine guns, and the bends of the river become narrower and more torturous. Those who can't wait to see what's in store for them can select a higher skill level from the four available, with the highest level starting you off at the bridge number fifty, and a course so narrow that Howlin's Mad Murdoch would have trouble negotiating it.

This is obviously no Sunday school picnic, nor is it exactly for anyone who's looking for the ultimate cerebral experience. This is a pure adrenaline game, demanding fast reflexes and a killer instinct. Graphics are slightly more detailed than the 2600 version, the shoreline having lost its blocky appearance and even acquiring some mountains on the periphery. But graphics come second to action in River Raid. It draws you in with beguilingly easy game play at the start, and then holds you with a challenge that increases in finely modulated steps.

River Raid is from the old school of game design: A simple idea, elegantly presented. In comparison to other computer games that present multiple challenges and full-fledged stories, it's something of an anomaly. But its fun cannot be denied. If you are still looking for a good ol' shoot 'em-up for your Atari computer, you can't do much better than River Raid.

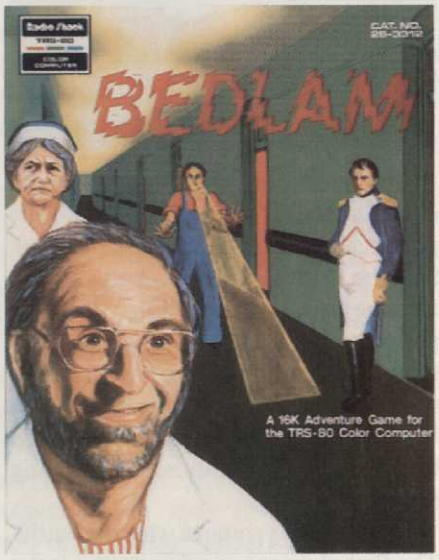
—D.P.

BEDLAM

(Radio Shack/16K Color Computer Cassette)

Like my mother used to tell me, "Son, there are two types of people in this world: There are those who are crazy about text adventures, think that they are a great institution, and are absolutely committed to them. Then there are those who think that anyone who likes text adventures is crazy, should be committed and then thrown into an institution." Now Radio Shack has decided to cover both markets with **Bedlam**, a cassette-based text adventure for the 16K Color Computer.

You're nuts. Or at least somebody seems to think you are, since you awaken to find youself in a padded cell. Fortunately, the door to the cell is unlocked, and you are free to wander the asylum's corridors in search of the way out. Using standard adventure commands, you



open doors, some of which have to be unlocked with a key that can be found elsewhere in the asylum, gather objects that will help you to escape, and attempt to enlist the aid of the various inhabitants of this looney-bin. The inmates carry such descriptive names as Picasso, Houdini, and X-Ray Bailey. Their usefulness to you is determined randomly each time you load the game, as is the location of the actual exit. Two inhabitants that definitely won't be of much use are a particular hostile doctor who keeps threatening to give you a lobotomy, and a nurse with a peculiar jagged scar right below her hairline who runs the electroshock therapy room with just a bit too much zeal.

The asylum isn't very large. Altogether there are about fifteen rooms to explore, not counting the corridors. More dismaying, most rooms are devoid of any objects that can help you in your quest. At best your inventory, at it's largest, may total about six items. Escape hangs almost totally on the behavior of the inmates, and most of their actions seem to indicate the existence of a hidden panel. Picasso goes about painting doors, Napoleon feels along the walls, while X-Ray stares at them. The problem is, they go through this behavior in every room they're in, and since not all of the characters are helpful in every game, about the best you can do is ask them to follow you and hope that they stumble upon something.

That is, if you can get them to follow you at all. You can key in "Merlin Follow" to which the computer will respond "OK, Lead The Way," but when you move, Merlin may just decide to say behind anyway. In fact, while the machine recognizes many of the standard adventure commands, quite a few either result in an untrustworthy response, or no response at all. If you tell the machine to "Jump Over" something, you'll receive the message "Your Success Is Measured In Leaps and Bounds," but further inspection will indicate that you haven't made any progress at all. Meanwhile, "Examine," which in other games normally yields a wealth of information is, with limited exceptions, practically useless here. What doesn't help is the fact that the instruction book contains no instructions on syntax. It's up to you to discover that you command other characters by keying in phrases like "Merlin Look," or that sentences can be as complex as "Throw The Key At The Cabinet."

In many ways, Bedlam reminds me of those jigsaw puzzles which, when assembled, form a circle or square of a single flat color. While some people relish the fact that each piece contains no clue as to where it might fit in the puzzle, others may let the monotony of it drive them to distraction. I think I fall into the latter group with Bedlam. All in all, I prefer my adventures to have elaborate plots, colorful surroundings, and tons of objects to inspect and use. Bedlam is a bit too "monochromatic" for me. If you decide that you fall into the opposite group, then make sure to take the "psychological test" that's included in the instructions. It provides valuable clues, including the way to overcome the effects of a lobotomy. For the rest of you who treasure your sanity, you may want to think thrice before purchasing Bedlam.

—D.P.

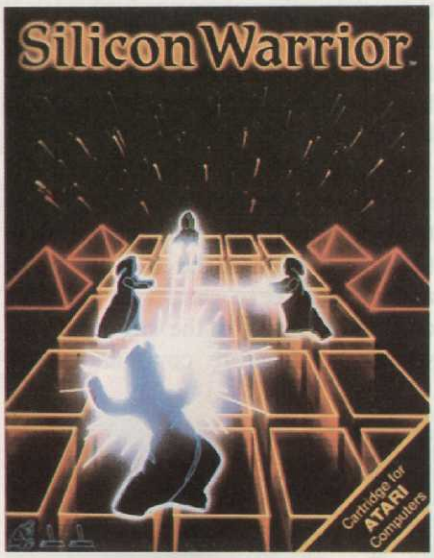
SILICON WARRIOR

(Epyx/Atari ROM Cart)

Time for the continuing adventures of the Q*Bert clones, that segment of the magazine where we feature yet another manufacturer who can no longer resist attempting to imitate the popularity of Mylstar's arcade game. Next to take a dip from the cube-hopping well is Epyx with **Silicon Warrior**, a ROM cart game for Atari computers. As befits the nature of the company, Epyx's variation of what is becoming the most popular theme of 1984 is geared toward the strategy player and features an unusual twist that, unfortunately, may not be available to those who have recently come around to Atari computing.

The instructions for Silicon Warrior go on about some sort of war to program computer chips. But the visuals, with its pyramid-shaped home bases, the be-robed warriors, and the playfield suspended in the starry void, belies the game's mystical inspiration. The object is simple: Up to four players (that's right, we said *four* players) compete on a five by five grid of rectangles in an attempt to claim five squares in a row, either across, up and down, or diagonally. Each player uses a joystick to maneuver his/her warrior from square to square. A flick/ release of the stick either horizontally or vertically (diagonals are not permitted) will send your warrior one square over in the direction indicated. By holding the stick in one direction, you can transport your warrior over several rectangles at a time. To claim a rectangle you need only land on a blank square to change it to your color. Landing on a square that your opponent has already changed will reset it to the blank color, permitting you to double back and claim it, if you wish.

Aside from the basic game, Epyx has included a number of options. Solo players can compete with from one to three computer controlled opponents, and so on. You can equip your players with lasers, which can be fired by holding down the action button and moving the joystick in the direction you want the shot to go. Each time a warrior is hit, he loses a little bit of energy, indicated by the darkening color of the warrior. Take too many hits, and your warrior is whisked to his pyramid for several long seconds to recharge, after which you can return him to one of the rectangles next to the rectangle where he bit the dust by moving the joystick in the direction desired.



You can also supply your warrior with defensive shields that can be activated by pressing the action button when the stick is in the neutral position. And you can arrange to have black holes show up periodically in the grid. If a player attempts to land on or cross over a rectangle that is occupied by a black hole, his/her warrior is instantly banished to his pyramid for another recharging session.

Claiming five squares wins the battle. The first player to win five battles is the winner of the game. Play speed can be adjusted to make the game more difficult, and players can either select any of the options available, or select a game that cycles through various combinations of options for each battle.

On the face of it, Silicon Warrior is a little like Q*Bert and a little like Tic-Tac-Toe. But the ability to cancel out a player's moves, as well as the possibility of having four players moving simultaneously, gives the game a complexity that is not apparent at first glance. This is not a game for those seeking the rapid, kinetic fell of Q*Bert. A lot of time is taken up watching your warrior dematerialize from one rectangle and materialize on another. Four player battles can go on for a considerable length of time, with each player stalemating the other, before a winner is declared. And even if you manage to claim five rectangles, your victory may be fleeting, since several seconds are provided to allow your opponents and opportunity to cancel out your triumph.

But if you're the type who treasures strategy over action, then you might consider Silicon Warrior the best of both possible worlds. You can develop some solid strategies to achieve success, such as claiming a row of rectangles while your opponents are helplessly caught in their materialization cycles, or trapping a competitor in a corner so that he/she cannot move. Meanwhile the laser and shield options give you the opportunity to lash out at those who dare to get in your way, a deliciously aggressive twist for a strategy game.

Epyx's strong suit has never been graphics, and Silicon Warrior isn't going to change their reputation. They've made an honest attempt at giving a 3-D look to the game grid, with the rectangles and pyramids drawn in perspective, as if they were receding into the distance. Somehow, it doesn't quite work. Another near miss is in the soundtrack, which assigns each player a mysical note that plays when a square is converted. Ideally, this is supposed to create melodious harmonies as the four players move about the board. Eventually though, the variations in timings between each player's moves makes the effect sound more like a doorbell gone haywire. None of these flaws are serious enough to get in the game play, however, and I wouldn't let them sway my consideration of their game.

Silicon Warrior is no doubt at its best when four human players compete against each other. And that's the problem. Only the Atari 400/800 offers four joystick ports. The most recent machines, from the 1200 on, only have two. On these later models, it's still possible for two humans to go against two computer opponents, but one of the game's most attractive features, the opportunity for simultaneously four player action, is completely lost. If you own one of the newer Ataris, and are a fan of strategy games, then you still might be pleased with Silicon Warrior. However, I tend to think that this game is much better suited to 400/800 owners who are seeking a more cerebral type of multiplayer game.

—D.P.

DOUBLEBACK

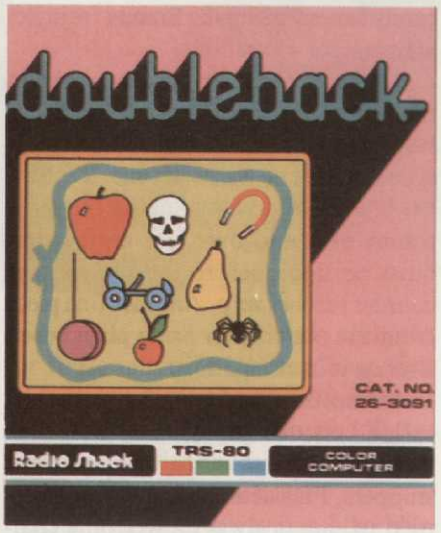
(Radio Shack/TRS-80 ROM Cart)

Attention doodlers! Lay down those pencils, drop those pens! Why waste your time on a activity with no returns when you can put your aptitude to good

use racking up points in **Doubleback**, Radio Shack's ROM cart game for their TRS-80 Color Computer?

In this one or two player game, your joystick controls a line being drawn across the screen. The direction the line is drawn is determined by the direction of the stick, while the number of degrees the stick is moved off center determines the speed of the line's movement. Your goal is to disintegrate the various objects that appear on the screen by completely encircling them with your line. The task is complicated by the fact that the size of the line is finite, so if you circle an object with too wide an arc, your tail will shrink before you get the change to close the loop. If you have to be economical with your steering, you also have to be precise, since letting the tip of your line run into any object will cost you a life.

Objects vary in point values and behavior. Apples, cherries and pears are stationary targets. Magnets and skates vibrate in place, threatening to bump into your line if you come too close. Yo-



yos move up and down, leaving behind a string that is also fatal to your survival. Spiders, which actually look more like houseflies, are the fastest adversaries, and can cover the most screen area. Once you have broken 10,240 points, indestructable skulls start to appear. These guys are spoilers, forming an obstacle course that becomes increasingly difficult to maneuver through.

Circling one object gains you points, but the biggest accumulations are achieved by circling two or more objects within one loop. By doing this, you not only earn the sum of each object's points, but that sum is then multiplied by the number of objects circled. For instance, if you can manage to circle a cherry (100 points), a magnet (150 points) and a skate (200 points), you earn a whopping 1,350 points. You start out with three lives. No bonus lives are awarded.

Those who frequent larger arcades may recognize Doubleback as a slight rewrite of Quantum, the Atari coin-op that had a game room half-life of about five seconds. I never had a chance to try that game out, but I'll settle for Doubleback any day. The Radio Shack joysticks, which have been universally condemned as being unsuitable for gaming, seem to be very well-suited to this game. Once you get used to controlling back speed and direction with one movement, maneuvering becomes almost second nature, with the onscreen line coming very close to being an extension of your own hand. Although the graphics are elementary, the movement of the line is smooth and responsive, giving it an organic quality that makes it seem like it's some sort of strange life form.

If there's any problem with Doubleback, it's that it perhaps doesn't advance fast enough for some players. Yo-yos don't appear until 2,560 point are scored, pears at 5,120 points, and don't expect to see your first spider until you've racked up 7,680 points. For those who are used to travelling in the video game fast lane, that might be too much bother for such small rewards.

Like Qix, another game that emphasizes doodling over blasting, Doubleback may be too abstact for some gamers. But if you desire good game play combined with features that let you give vent to creativity, or if Qix is a little too hard-edged and geometric for you, then the fluid movements and free-form game play of Doubleback will probably more than compensate for its slow increase in difficulty. Altogether, a unique, well-realized game.

—D.P.

BUCK ROGERS: PLANET OF ZOOM

(Sega/Atari ROM Cart)

The movie *Buck Rogers in the 25th Century,* which was released several years ago, didn't do such great shakes at the box office. The TV series it eventually became did a little better, lasting two seasons and making it into syndication. But, the biggest success this old comic

strip hero has recently had has been in the arcades, with Sega's **Buck Rogers: Planet of Zoom**. Now Sega has adapted the game as one of their first ROM cart titles for Atari computers.

You don't have to be an arcade habitue to know that the object of this one-player game isn't going to be to make daisy chains. For that matter, it doesn't have much to do with Buck Rogers, either. There's a war (another one?) going on at the Planet Zoom. Using your joystick to control your spaceship, you must speed over the planet's surface, mowing down whatever gets in your way. Your view is from behind and above your ship with the ground and the obstacles moving towards you in realistic 3-D perspective. Left and right on the stick moves your ship in those directions. Up and down not only controls your ship's altitude over the bottom third of the screen, but also the ship's speed. When you are at maximum altitude, holding the stick in the up position increasing your velocity. Similarly, bringing the ship down to the ground and then holding the stick slows you down.

You're best off not going at full speed though, since you need the reaction time to cope with all of the obstacles that are thrown your way. Your first task is to maneuver an obstacle course of Electron Posts, which come paired up to form gate-like openings. Maneuver through the required number of gates (ten in the first level) without crashing and you are moved on to the next round. Here, in addition to the posts, there are strike forces of alien saucers that rise up from behind your ship (off the bottom of the screen),

zoom into the distance and then double-back on a collision course with you. You can hit the action button to fire missiles at the enemy, which not only earns you points but also moves you closer to your goal for the round (fifteen posts or saucers in level one).

The third round features Electron Posts, saucers, and Space Hoppers, long-legged laser-armed craft that follow an erratic path as they hop up to your ship. Maneuver and zap your way to your goal, and you blast off into space for your final confrontation. Here, after zapping more saucers, you must take on the Mother Ship, a large, swift craft that, on top of firing its own lasers, can also bounce your shots back at you if you fail to hit the ship dead center to destroy it.

As each level progresses, a fuel meter at the top of the screen ticks off the amount of time left before your ship self destructs. There's no way of replenishing your fuel supply, but you can buy yourself some time by travelling at a faster speed, which burns up your fuel more slowly. The trade-off, of course, is that it also provides you with less time to react to oncoming obstacles. After you have eliminated the Mother Ship, your fuel tanks are refilled, and you are moved on to the next difficulty level: Four more rounds that feature higher goals. Electron Posts that fire at you, and more and faster enemies. You start off with five ships and are awarded an extra ship for each 20,000 points scored. (Since destroying the Mother Ship is itself worth 20,000 points, you essentially get a bonus ship each time you move on to the next level.) Sega also gives you the option of controlling your ship via the computer's keyboard, a rather useless feature, since anyone who intends to play games on the Atari is almost certain to buy a set of joysticks.

By this time, fans of the coin-op Buck Rogers are saying "Wonderful. Where's the trench battle?" Sorry, but apparently only ColecoVision owners are privileged enough to get that particular sequence. But don't sell Sega's adaptation short just because it lacks that one round. In other regards, this is a well designed, enjoyable shoot'em-up. The 3-D animation is beautiful. The saucers are especially well done, as they follow their serpentine path out to the horizon of the planet, shrinking to mere dots when they are furthest from your ship. The only sore point I have is that the enemy's laser fire is hard to make out against both the moving landscape of the first three rounds and the expanding star traces of the fourth round. You're best off keeping your ears open for the distinct laser sound, and then getting out of the way of whatever craft happens to be closest to you.

With its emphasis on getting through each round as quickly as possible, this is essentially a maneuvering game. That doesn't mean that the battle elements take a backseat, though. Buck Rogers manages to deftly combine both racing and battle concepts in a game that requires skillful manipulation of the joystick and good targeting abilities. I've found that your best chances for survival are by travelling at a moderately fast speed and by keeping your ships as high up as possible. You should drop down only when it's necessary to reduce speed, since the closer you get to the ground, the greater the risk you run of having a saucer plow into you from behind. Also, avoid going out of your way to nail saucers and hoppers. Concentrate on negotiating the Electron Posts while pegging only the enemies that should happen to get in your way.

Atari's Star Raiders still holds the title as best all-around first-person game, but Buck Rogers: Planet of Zoom is still a solid, fun action game. It's nice to look at and challenging to play. The shoot-em-up category is becoming overcrowded, but if the idea of Buck Rogers appeals to you, then don't hesitate to pick it up.

—D.P.

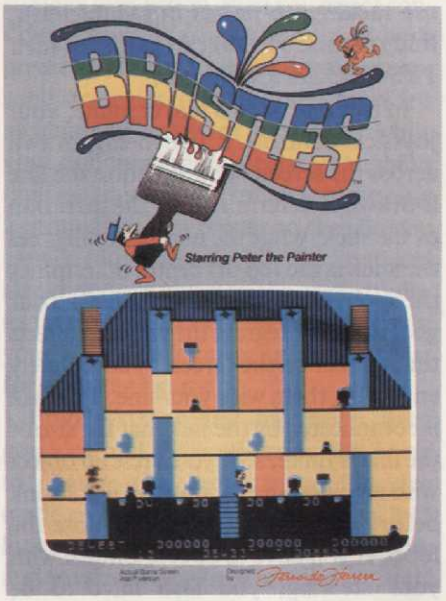
BRISTLES

(First Star/Commodore 64)

On the surface, the object of **Bristles** for the Commodore 64 with a disk drive is to paint all the rooms in a building. Completing a game screen (one of 48) earns gamers a piece of the secret message, bringing them to the real reason behind all these hijinks.

Arcaders get to choose the sex of their onscreen painter as well as the number of players (up to four). Certainly no discrimination here!

Along the way Peter the Painter and his co-workers run into various baddies. Flying Half Pints and the Dumb Buckets don't present too much of a problem, but Brenda the Brat and Bucket Chucker are downright cruel. Brenda puts handprints on wet walls, while meeting BC



costs gamers one of the ten brushes they start with.

This climbing/jumping game has ladders and elevators for maneuvering. Some rooms contain steam pipes which must be hopped over, while others contain paint rollers worth bonus points and candy canes which take Brenda from her artwork for 15 seconds.

On some levels players must paint in the dark or use invisible paint. Sound is very important here because painting is accompanied by a special tune. Remember it's well to avoid re-doing the same rooms over and over, for each house must be done before the bonus time counter reaches zero. Another fine piece from the Nutcracker Suite plays when Brenda is in circulation.

As excellent and colorful as the detailed visuals are; the melodies throughout this contest are the real show stoppers. Play action takes some getting used to, but is always a welcome challenge. Overall, this First Star creation follows in the hallowed footsteps of its illustrious ancestors. *—T.S.*

THRESHOLD

(Sierra On-Line/Commodore-64)

How many superlatives can I use to describe **Threshold**, without sounding trite? I'm not quite sure, but Sierra's Commodore 64 disk version of this old Apple standard is without equal.

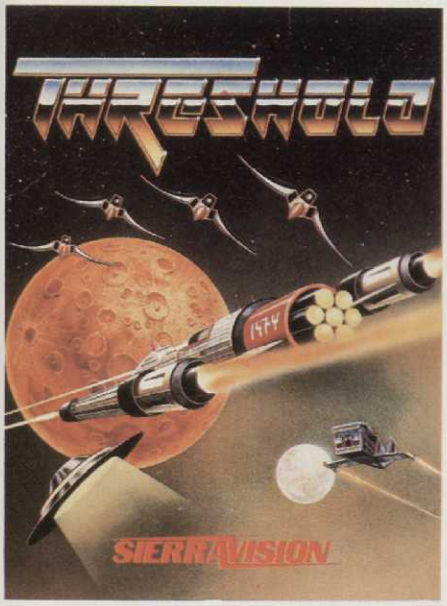
Gamers command five (one at a time) in an effort to repel a massive attack on good old Mother Earth. There are twenty waves of enemy ships, each looking and behaving differently.

Moving the joystick left or right

moves the active ship in the corresponding direction: while pushing down on it engages a hyperdrive which gives such a temporary burst of speed to the line defender that the enemy waves appear to be traveling in slow motion. The fire button performs its usual function, of course.

Though there is an unlimited supply of laser fire, players must not shoot with wild abandon because the laser cannon overheats, leaving the craft defenseless. It's at just this point that a suicide attacker usually peels away from the pack and tests the arcader's reflexes to the max.

A total of eleven reserve ships are allowed, and a pause option is available for those untimely interruptions. The first 50,000 points earn Earth Command another ship, but from there on 100,000 points are needed for additional vessels to be added to the arsenal.



After every fourth wave a mother ship drains the remaining fuel for conversion to bonus points, and then tops off the interpid fighter's tanks before it confronts more of the onslaught.

The screens are colorful, the action deadly, and yet the game has a refreshing sense of humor about it. The great sound capabilities of the 64 aren't really used to the fullest, but this is a translation of an already successful game—so why mess with success.

Though an update of a straightforward slide and shoot, Threshold has all the strengths—and none of the weakenesses normally associated with that type of game.

—T.S.

CONGO BONGO

(Sega/Atari ROM Cart)

Good intentions are not always enough. Take Sega's ROM cart adaptation of their arcade game Congo Bongo for Atari computers. I don't think it can be said that Sega's designers didn't make an earnest attempt at translating the original so that it was playable on a home system. All things considered, they did the best they could.

This is the story of the hunter who went searching for **Congo Bongo,** a big ape with an even bigger mean streak. Where the action of the arcade Congo Bongo is played out on four different screens, the home version has borrowed only the first and last of those screens. You start out on Jungle Mountain. Here you must reach Bongo, who's waiting for your at the top of the screen, by climbing up the step-like ledges of the mountain, crossing a bridge suspended over a raging river, jumping a chasm, crossing Monkey Plateau (you'll never guess why they call it that), leaping a waterfall, and climbing two remaining ledges. All the while, you must avoid the coconuts that Bongo is cheerily rolling down the mountain in an attempt to bowl you over.

You must manipulate your joystick to move your explorer across the landscape. Left and right on the stick moves your explorer in those directions but, because of the unsual three-quarters point-of-view presented in this game, you must move the stick to either the upper left or the lower right in order to move towards or away from the background. To climb a ledge, you must move your explorer so he comes in contact with its side, and then hold the stick as he automatically hikes himself up to the next level. Pressing the action button causes your explorer to jump, useful for leaping caverns, or knocking off any monkeys that climb on your back and attempt to throw you into the river.

When you have made it to the top ledge, the scene shifts to the Great River. Here you must leap from the shore to nearby lily pads, ride the pad over to a friendly hippopotamus, who will let you hitch a ride on its back, if you can make the jump. You then leap from the hippo to a small island, and from there to two fish that travel in opposite directions across the river. A jump onto the opposite shore, some well-timed moves to avoid the rhinoceros that continually charges across the path, and before you know it, you're climbing the last two ledges and, for some reason, giving Bongo a hot-foot.

At the start of each screen, a countdown timer is set at a specific point value, starting with 5,000 points for level one and increasingly by 1,000 points for each subsequent level until a maximum of 9,000 points is reached. If you cannot reach Bongo before the timer runs out, you lose a life and have to start the screen all over again. Whatever points are on the counter when you reach Bongo is added to your score. Every time you successfully complete the river screen, the game starts over on the next difficulty level, which can vary the number of jumps you have to make in order to get the monkeys off your back, and the number of fish that are hostile to your attempts to hitch a ride on their backs. You start off with three lives and are awarded a bonus life for each 10,000 points earned.

It can't be said that Congo Bongo isn't complex enough. You must contend with hostile enemies, maneuvers that call for split second-timing, and that strange, skewed perspective that requires you to think twice about which direction you want to go before actually making a move. The graphics are a decent simulation of the original's ultra-detailed Zaxxon-like visuals, although the color scheme is far from attractive and Bongo has lost the womderful ugliness he had in the arcade version. All in all, a suitable adaptation.

So why do I feel so unenthusiastic about Congo Bongo? To be absolutely honest, I'm not quite sure. It isn't that I don't like the concept. I've played the arcade verison a few times, and pretty much found it a clever variation on the Donkey Kong concept. But there's something missing from the home version. It's as if they copied the rules and the looks but left out the game's soul. There's no surprises, nothing there to make me laugh. In what's supposed to be a cute game, that's a serious omission.

If you're really sold on Congo Bongo, then what I'm saying might not make any difference to you. If what you're seeking is just an entertaining climbing game, then check out Miner 2049er, Jumpman, or Jumpman Junior. Congo Bongo doesn't quite make it.

—D.P.

STATS

Present Position 2/8/84	Last Position 2/4/84	Weeks on Chart	Game
1	1	27	Q*bert (Parker Brothers)
2	3	27	Pole Position (Atari)
3	4	51	Ms. Pac-Man (Atari)
4	2	15	Popeye (Parker Brothers)
5	5	15	Dig Dug (Atari)
6	8	47	Centipede (Atari)
7	9	13	Joust (Atari)
8	6	75	Frogger (Parker Brothers)
9	10	31	Jungle Hunt (Atari)
10	14	9	Space Shuttle (Activision)

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Top Arcade Games

	Percentage
1. Dragon's Lair (Cinematronics)	100.0
2. Star Wars (Atari)	76.1
3. Pole Position (Atari)	71.3
4. Champion Baseball (Sega)	63.8

Provisionally rated

1. M.A.C.H. 3 (Mylstar)	108.5
2. Track & Field (Konami/Centuri)	96.8
3. Cliff Hanger (Stern)	95.9
4. Discs of Tron (Bally)	81.6
5. Elevator Action (Taito)	68.0
6. Crystal Castles (Atari)	61.1

These are the top earning arcade games according to a poll of operators. Provisionally rated games had a response rate of less between 10 and 25 percent. © 1983 by Play Meter Magazine

HIGH SCORERS

(effective 4/25/84)

Baby Pac-Man	6,685,130	Richard Sattilaro Edison, N.J.
Bagman	6,840,850	Gerry McCloskey Pentieton, B.C. Canada
Black Widow	930,100	James Vollandt Uplands, CA
Buck Rogers	1,016,495	Kelly Keenan Santa Maria, CA
Bump 'N'Jump	2,413,182	Bob Hastings Lansing, IL
BurgerTime	5,944,700	Steve Shepard Santee, CA
Bubbles	1,364,360	Mark Bersabee Milpitas, CA
Congo Bongo	883,400	Tom Collum Nacagdoches, TX
Crystal Castles	857,689	Eric Ginner Milpitas, CA
Champion Baseball	1,130,560	Gus Papas Upland, CA
Defender	76,377,300	Burt Jennings Futhsom, N.C.
Dig Dug	4,129,600	Ken Arthur Blackburg, VA
Donkey Kong Jr.	1,259,300	Calvin Frampton Pleasant Grove, Utah
Dragon's Lair (3 men)	370,954	Kevin Crane Tulsa, OK
Elevator Action	60,500	Mike Ward Madison, WI
Frontline	727,500	Shelby, N.C. John Dunlea Wilmington, N.C.
Gorf	2,220,000	Jason Smith Midland, TX
Gravitar	4,722,200	Raymond Mueller Bolder, Colo.
Gyruss	28,051,900	Dave Wissman Cincinnati, OH
Joust (new chip)	101,192,900	Robert Gerhardt Lloydminster, Alberta, Can.
Jungle Hunt/King	1,510,220	Michael Torcello East Rochester, NY
Lost Tomb	45,577,020	Bill McAlister Ottumna, Iowa
M.A.C.H. 3	307,300	Alan Pearson Wilmington, NC
Mario Bros.	1,202,210	Spencer Ouren
Mappy	487,740	Steve Porter Winnipeg, Manitoba, Canada
Millipede	6,995,962	Jim Schneider Santee, CA
Ms. Pac-Man	770,300	Chris Ayra Ft. Lauderdale, FL
Pac-Man Plus	3,213,900	Shannon Ryan Upland, CA
Pole Position	66,960	Les Lagier, Mike Klug (tie) San Jose, CA
Popeye	1,439,430	Orlando Diaz Humaco, P.R.
Professor Pac-Man	999,990	Greg Gunter Peoria, IL
Q*bert	32,273,520	Bob Gerhardt Lloydminster, Saskatchewan, Canada
Rally-X	1,202,730	John Pomerenke Okabena, MN
Robotron	511,834,625	Robert Bonney Kirkland, WI
Satan's Hollow	17,811,250	Mike Ward Madison, WI
Star Trek	1,067,500	Tim Collum Dayton, Ohio
Star Wars (6 shields)	108,251,034	Dave Palmer Rocklin, CA
Sub Roc	431,900	Timothy Tomastik Santa Maria, CA
Super Pac-Man	588,430	John Azziz Santa Maria, CA
Tutankham	1,736,140	Mark Robichek San Jose, CA
Track & Field	92,190	Phil Britt Los Angeles, CA
Xevious	999,990	Don Morian Seattle, Washington
Zoo Keeper	14,049,570	Bill Channam East Lansing, MI

Our thanks to Walter Day Jr., of Twin Galaxies International Scoreboard (228 East Main St., Ottumwa, Iowa 52501). Readers who think they might have a high score should send a self-addressed, stamped envelope to Walter Day who will forward the necessary information and forms. Cities given are the location where the high scores were achieved.

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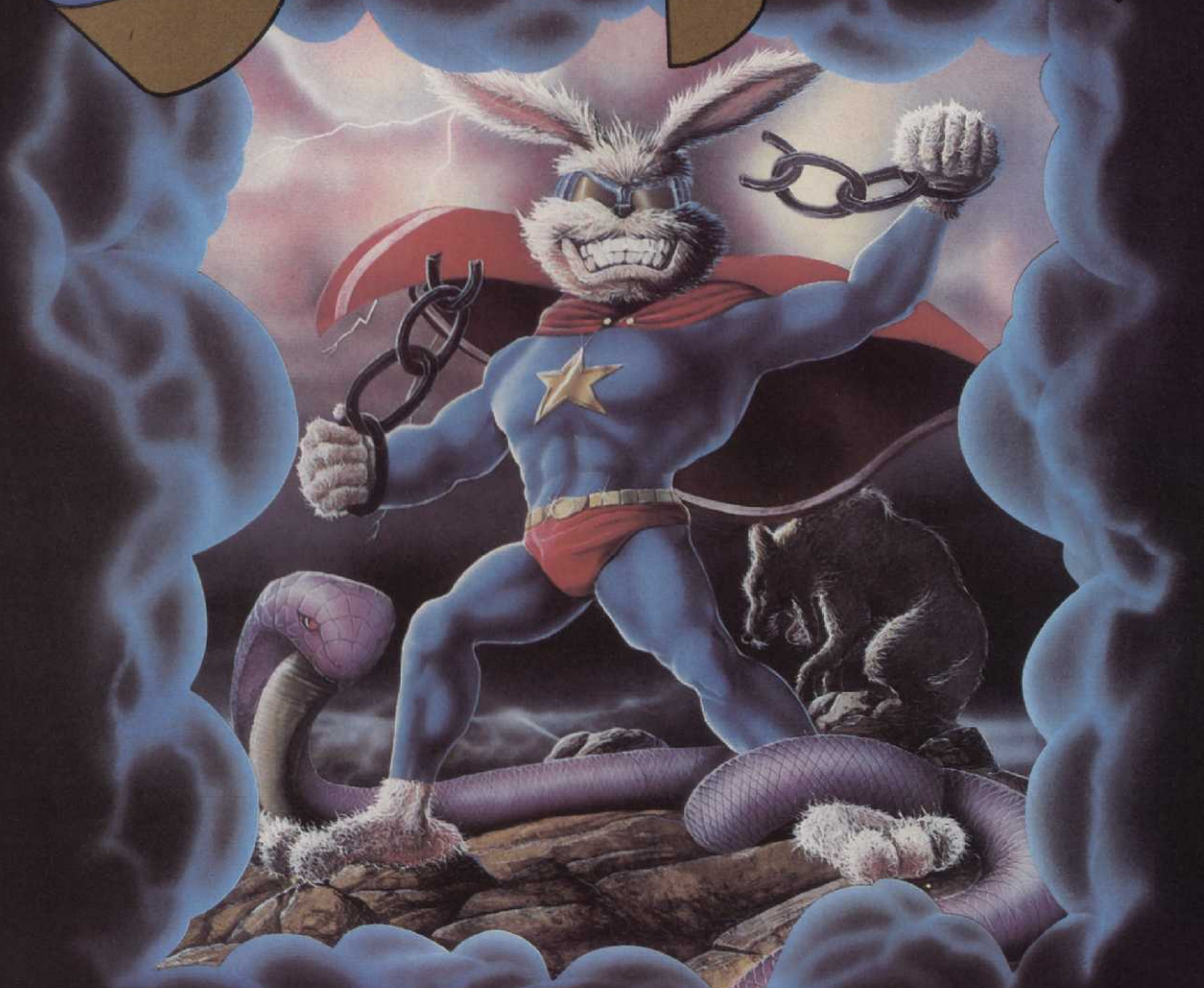

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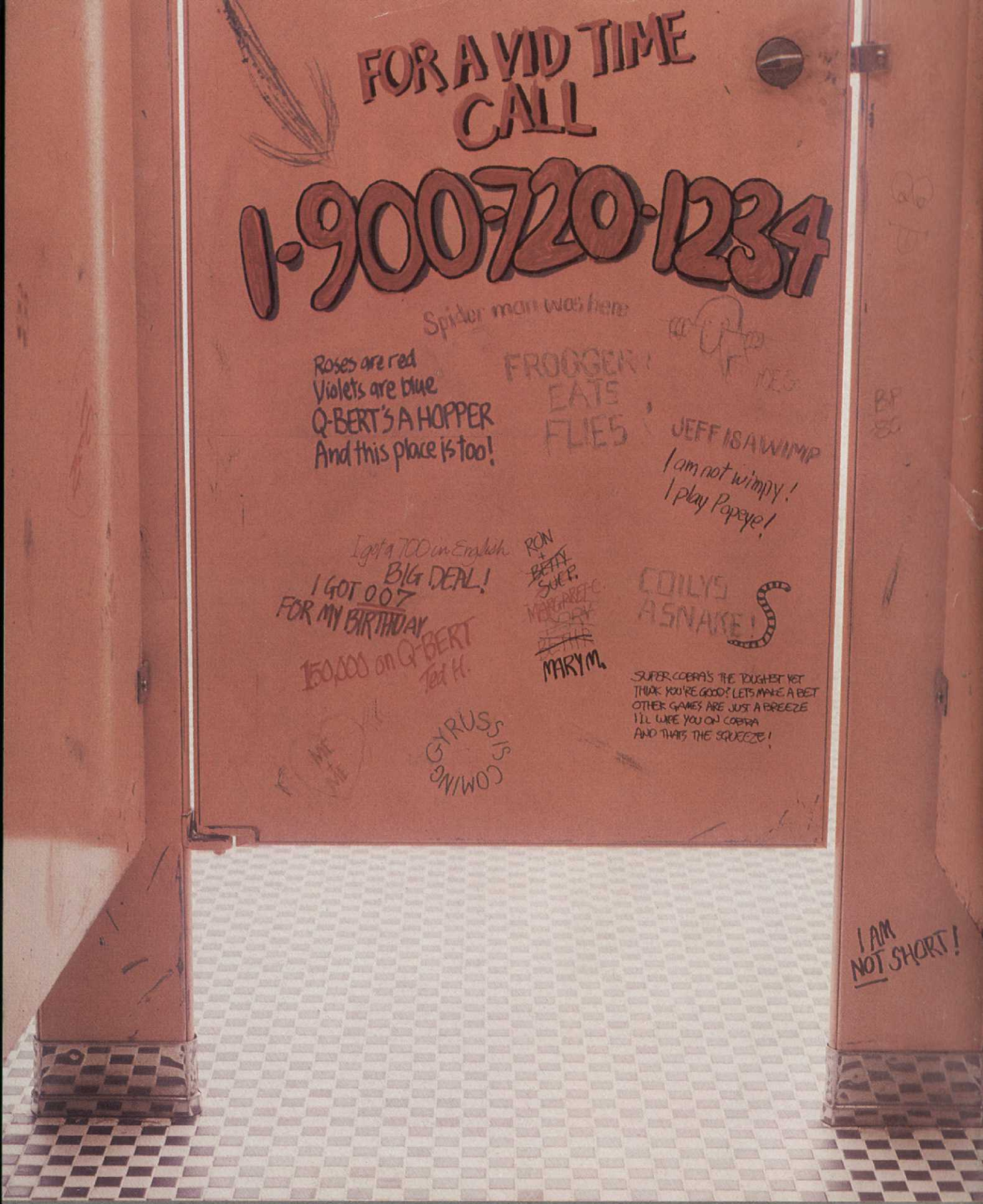

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